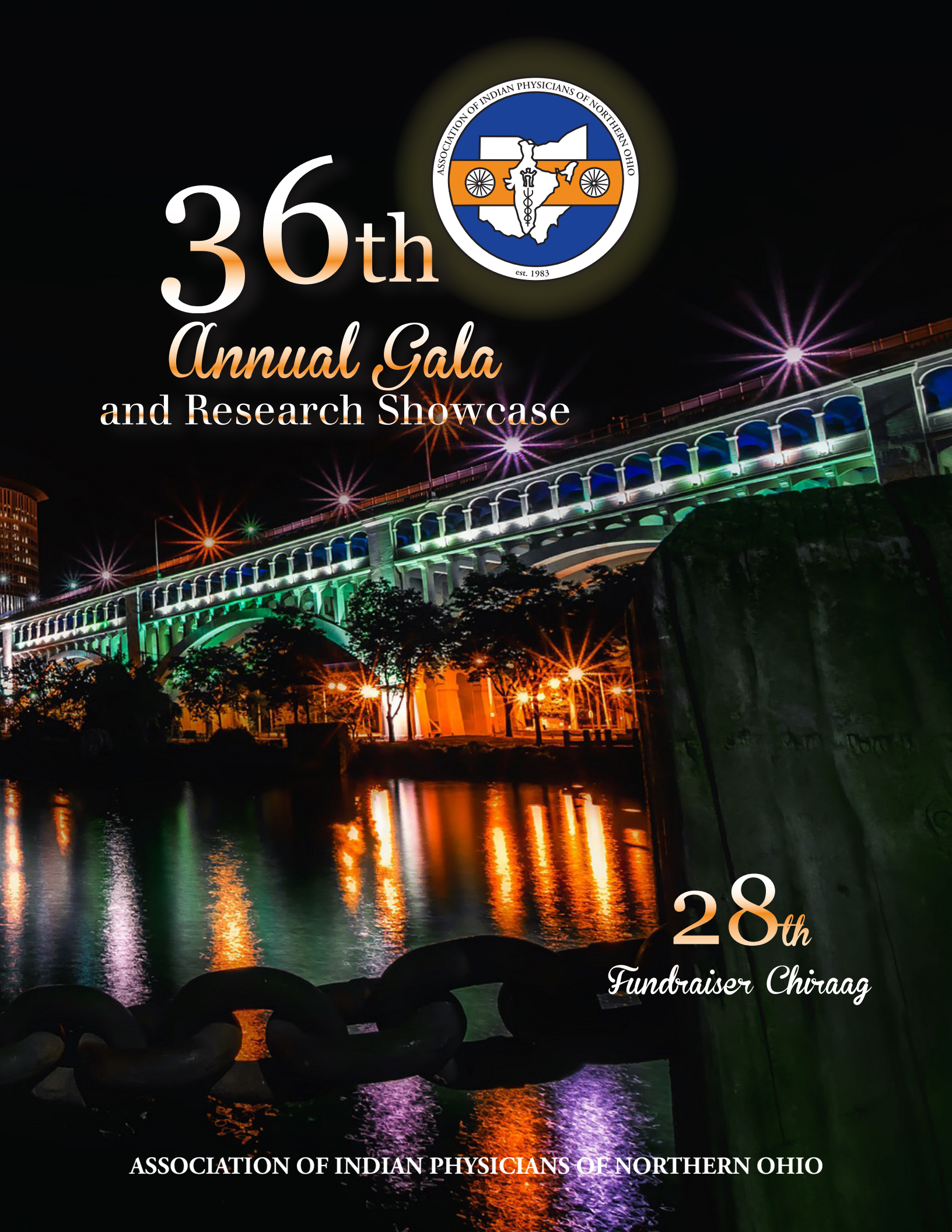

36th Annual Gala and Research Showcase

28th Fundraiser Chiraag

ASSOCIATION OF INDIAN PHYSICIANS OF NORTHERN OHIO

Helping you protect what matters most

is what matters most to me.

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AIPNO COMMITTEES 2019

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Umesh Yalavarthy, MD – through 2019

EXECUTIVE ASSISTANT

Binnie Eiger
3702 Sutherland Road
Shaker Heights, OH 44122
Phone: 216-228-1168
Fax: 216.848.0088
email: admin@aipno.org
website: www.aipno.org

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Manmeet Ahluwalia, MD
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Umesh Yalavarthy, MD

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Rajvinder Parmar, MD
Dharmesh Mehta, MD
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Raina, Rupesh, MD
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Mehta, Sangita, MD
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Corattur Natesan, MD
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Saloni Khatri, MD

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Mona Gupta, MD
Rupesh Raina, Md
Member:
Harbhajan Parmar, MD

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Members:
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Geetu Pahlajani

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Chairperson: Arun Gupta, MD

Friends & Family join
AIPNO in congratulating

Dr. Samir Kapadia

2019 Distinguished Physician of the Year on his Achievement

Congratulations!

Table of Contents

PRESIDENT'S MESSAGE

Dear Members, Sponsors, Beneficiaries and Friends

Following the path shown by its predecessors AIPNO continue to grow its base and numbers since 1983. AIPNO draws its strength from the experience of old members and the energy of its young members. Every year younger members come up with new innovative ideas and we try to give con-crete shape to these ideas with the experience of our senior members. This year we recruited many new members and involved large number of active members to achieve the mission of enhancing the quality of health care by fostering excellence and professionalism in the practice of medicine and sup-porting efforts to improve the availability of healthcare to under-served populations.

Philanthropy has been one of the key missions of AIPNO. Multiple medical camps were organized by Medical Yatra. Car-rying forward this mission to bring awareness among masses about Hypertension, Diabetes, Heart Disease, Hyper-lipidemia, Hearing and vision loss, this year, we organized a free medical camp in Willow Praise Church in Willowick. It was a huge success. I take this opportunity to thank Dr. Raj Vallabhaneni, Dr. Mona Gupta, Dr. Dharmesh Mehta, Dr. Varinder Dhillon, Dr. Manjinder Kaur, Dr. Vikram Rao, Dr. Atta Asef, Dr. Jaya Shah and Mr. Ramesh Shah for their open-hearted support.

This year we will celebrate our 7th Research Showcase. Several organizations have tried to emulate our success. It en-thuses the students, researchers, residents, hospitals, nurses and scholars to participate in AIPNO and help us recruit new young talent, which will help AIPNO to set new milestones and accomplish new heights in future. Dr. Beejadi Mukunda and Dr. Mona Gupta have worked relentlessly for many years to achieve this peak.

Other mission of AIPNO is continuous medical education. Keeping this in mind, we are organizing a CME program at Regency Hospital on November 9, 2019. I would like to thank Dr. Rupesh Raina and Lisa Ballinger for making this possi-ble.

Social Media coverage and online presence have given us public recognition, It has been instrumental in extending our presence in the community. Dr. Dharmesh Mehta has worked tirelessly on this site for the better interest of organization and to keep the people updated with upcoming events.

AIPNO also has its fair share of fun. We had AIPNO Picnic in 2019. It was made possible by the hard work of Dr. Rajvinder Parmar, Mrs. Hetal Mehta, Dr. Raj Vallabhaneni and Dr, Geetu Raina and other members. There was fun at the AIPNO Golf outing in 2019 organized by sports committee chairperson Dr. Arun Gupta.

AIPNO is honored to contribute to various organizations in greater Cleveland that share our mission and vision. This year AIPNO completed $100,000 pledge to Cleveland Sight Center over five years period. Now

we are looking for new beneficiary for our legacy gift. Each year we also choose a primary beneficiary. After reviewing the track record and contribution to mankind we chose WomenSafe.Inc as our major beneficiary. WomenSafe's mission is to provide emer-gency shelter and support services for survivors of domestic violence and provide education in the community aimed at reducing the incidence of domestic violence and making the community aware of what help is available.

All achievements of AIPNO could be possible only with the generous support and encouragement of donors and mem-bers. My heartfelt gratitude to every donor who has Supported AIPNO through all these years. We will work hard to live up to your expectations so we can win your support for years to come,

My sincere thanks to Dr. Beejadi Mukunda and Dr. Umesh Yalavarthy and other board members for their unselfish sup-port. I would also like to pay my gratitude to the members of the executive committee for their unconditional support.

Last but not least I would like to thank Binnie Eiger, executive assistant, who is the central pillar of our organization, for her untiring support throughout the year.

I take this opportunity to thank my wife Dr. Rajvinder Parmar (Rosy) for her unsparing and relentless support. I would also like to thank my son Aetan and daughter Mahak for letting me work throughout the year with a smiling face and without any complaint.

Sincerely,

Harbhajan Parmar, MD.
President of AIPNO

PRESIDENT-ELECT & ENDOWMENT COMMITTEE REPORT

Dear AIPNO friends and families,

Warm welcome to the 28th "Chiraag" Annual Fund-raising Dinner and 7th Research Showcase. I am delighted to be the Endowment Chair of "Chiraag" and Chair of CME, 2019 and want to take a moment to simply say thank you. I am grateful to our founders, our sponsors, our endowment & executive committee and AIPNO Board of Trustees in bringing together this event and making it the epitome of success.

We are proud and thrilled to support WomenSafe Inc -The Green House. WomenSafe, Inc. not-for-profit domestic violence shelter and resource center in its 38th year of service to survivors of domestic violence. WomenSafe's mission is to provide emergency shelter and support services for survivors of domestic violence throughout Northeastern Ohio. WomenSafe responds to the needs of victims experiencing domestic violence and provides education in the community aimed at reducing the incidence of domestic violence and making the community aware of what help is available. It is one of only two of the nearly 80 domestic violence programs in the State of Ohio whose programs are fully certified by the Commission on Accreditation for Rehabilitation Facilities (CARF) and the Ohio Department of Mental Health. The agency is also certified by Medicaid for its diagnostic assessment, counseling and community support programs.

AIPNO could not have fulfilled its goals and attained its mission without several generous sponsors and patrons who mirror our mission and values. I want to wholeheartedly thank each and every one of our sponsors for their time, attention and passion to help us remain zealously dedicated to our undertaking and cause. AIPNO is indebted for the continued contribution of all the Health Care Systems in greater Cleveland, including University Hospitals, Lake Health, and community businesses. Our success in raising funds this year was also the result of significant individual donation from Foundations Health Solutions, Skafco, Atrium Medical Group, ID Consultants, Saber Health Care Group, BCJC Group Baird, Dingus & Daga Inc. and HCR ManorCare. These resources help us support medical education and conduct the Research Show Case annually. I am thankful to Dr. Beejadi Mukunda for his enthusiastic support.

I am proud to say AIPNO is the largest organization in the state of Ohio geared towards enhancing the quality of health care by fostering excellence and professionalism in the practice of medicine and supporting efforts to improve the availability of health care to under-served populations in the community and in India. Dr. Jaya, Mr. Ramesh Shah, Dr. Saroj Mahalaha and their team worked tirelessly to make MEDICAL YATRA 2019 an impactful mission.

Sincere thanks to our friends, families and every single one of you in attendance, who have supported AIPNO live up to its sole mission of giving back to the community, once again. I would like to thank our executive
assistant Binnie Eiger who has been instrumental in putting this gala event together. I am especially indebted to my wife Dr. Geetu Pahlajani and children Manan and Manya for supporting me to serve AIPNO.

"Chiraag" the Radiance will continue leading AIPNO in its benevolence and almsgiving journey. As well said by Mother Teresa: "Love is not patronizing and charity isn't about pity, it is about love. Charity and love are the same — with charity you give love, so don't just give money but reach out your hand instead."

Sincerely,
Rupesh Raina, MD, FACP, FAAP, FASN and FNKF
Chair, Endowment Committee, Chiraag
Chair AIPNO CME 2019 and Co-Chair, Research Showcase

CHIEF GUEST:

JUSTICE MELODY J. STEWART

THE SUPREME COURT OF OHIO

Melody J. Stewart was elected in November 2018 to a full term as the 161st Justice to serve on the Court. Prior to joining the Supreme Court, Justice Stewart served on the Eighth District Court of Ap-peals – elected to an unexpired term in 2006, and twice reelected to full terms. She served as the court's Administrative Judge in 2013.

Justice Stewart has more than 30 years of combined administrative, legal, and academic experience. She was an administrator for a health care management company, a music teacher, a civil defense litigator, and a law school administrator and professor before being elected to the Court of Appeals. While on the appellate court, Justice Stewart was assigned to hear cases in other appellate districts and on the Ohio Supreme Court.

Justice Stewart earned a Bachelor of Music degree from the College-Conservatory of Music at the University of Cincinnati; her law degree as a Patricia Roberts Harris Fellow from the Cleveland-Marshall College of Law, Cleveland State University; and her Ph.D. as a Mandel Leadership Fellow at Case Western Reserve University's Mandel School of Applied Social Sciences. She also was awarded an Honorary Doctor of Laws degree from Cleveland State University in 2018.

After practicing law as an assistant law director for the cities of Cleveland and East Cleveland, Justice Stewart worked as a lecturer, an adjunct instructor, and an assistant dean at Cleveland-Marshall be-fore joining the full-time faculty. Her primary teaching areas were ethics and professional responsibil-ity, criminal law, criminal procedure, and legal research, writing, and advocacy. Additionally, she taught at the University of Toledo College of Law and at Ursuline College. She also was director of student services at Case Western Reserve University's School of Law.

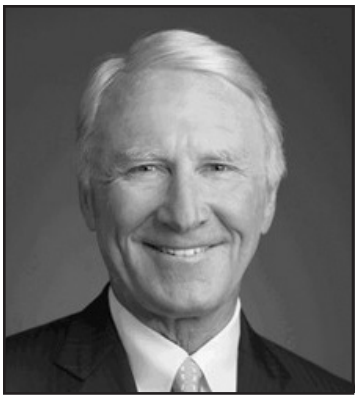
Justice Stewart has served on many boards of trustees and been a member of various professional, educational, civic, and community organizations. She also served as a commissioner and chair of the Board of Planning and Zoning for the city of Euclid. Recently, Justice Stewart completed serving as a member of the Ohio Criminal Justice Recodification Committee; on the board of the Supreme Court's Judicial College; and as chair of the Ohio Capital Case Attorney Fee Council.

Justice Stewart is admitted to practice in the state and federal courts in Ohio, the District of Colum-bia, and the United States Supreme Court.

Of historical note: Justice Stewart is the first African-American woman elected to the Ohio Supreme Court.

KEYNOTE SPEAKER:

MARC S. BYRNES



Marc S. Byrnes is Chairman of Oswald Companies. Under Marc's leadership, the 125-year employee-owned (ESOP) company has enjoyed significant growth and has strengthened its position among the top 50 largest insurance brokers in the United States. The firm is also ranked among the elite top 10 privately held brokers in the country specializing in employee benefits and financial services that was founded by Marc when his agency merged with Oswald in 1987.

A fixture in the Northeast Ohio civic community, Marc recently served as Chairman of the Board of Directors of United Way of Greater Cleveland. He serves on United Way's Board of Trustees, Execu-tive and Philanthropic Fund Committees. He was named United Way Volunteer of the Year in 2011. Marc is an active member on the following Boards: Rock and Roll Hall of Fame and University School's Board of Trustees and Executive Committee. Most recently, Marc chaired the Search Com-mittee for Head of School at University School. He received University School's Distinguished Alumni of the Year Award in 2012.

In addition, Marc serves as a Board Advisor to: Nirvana Analytics, Proformex, Tailwind Technologies, Inc., and US Bank.

Marc served on the bond issue committees for the Cleveland Metropolitan School District and the Metroparks. He acted as transition Co-Chair for County Executive, Armond Budish, and he is a mem-ber of the County's Economic Commission Council. Marc is a member of the Advisory Board for CSU's Bernie Moreno Center for Sales Excellence. He serves as Chairman Emeritus of the Cleveland Leader-ship Center, the preeminent organization for building and engaging civic leadership, as well as par-ticipates on CLC's Endowment Committee. Marc was President (2012-2013) of the 50 Club of Cleve-land, the city's largest leading business society.

Historically, Inside Business has selected Marc among the Power 100 most influential leaders in Northeast Ohio. In 2016, Marc had the honor of being inducted into the Business Hall of Fame. In January 2018, Marc was the recipient of the Gordon E. Heffernan award for Values, Ethics and Com-munity from the Values-in-Action Foundation and in November 2018, he received the prestigious Humanitarian Award from The Diversity Center of Northeast Ohio.

Marc is a 1972 graduate of University School and earned his B.A. from Williams College in 1976.

BENEFICIARY STATEMENT

WomenSafe, Inc. is a 501 (c)(3) not-for-profit domestic violence shelter and resource center in its 37th year of service to survivors of domestic violence. WomenSafe was founded in 1980 by a group of citizens who were concerned about local women and their children who were living in violent homes. WomenSafe's mission is to provide emergency shelter and support services for survivors of domestic violence throughout Northeastern Ohio. WomenSafe responds to the needs of victims experiencing domestic violence and provides education in the community aimed at reducing the incidence of domestic violence and making the community aware of what help is available.

WomenSafe first provided emergency shelter to abused women and their children with the help of volunteers who provided shelter in their own homes. In November 1980, WomenSafe opened its own shelter, using a rent-free apartment, attached to the Geauga County Sheriff's Department. Due to the increased traffic flow at the Sheriff's Department, lack of space and expansion of services, WomenSafe found it necessary to relocate its shelter. WomenSafe rented a house located on the Chardon Square in March 1982. By September 1986, WomenSafe having once again out grown its facility purchased a home outside of Chardon Square. At that time, WomenSafe's confidential location housed both the emergency shelter and part of its administrative offices. Additional office space was donated at the Eltech building in Chardon to provide much needed space for administrative personnel and agency volunteers. Outreach counseling services and peer support pro-grams were provided at off-site locations.

In October 2007, WomenSafe opened "the Green House" a disclosed shelter that houses all administrative personnel, shelter staff, the emergency shelter, and all outreach services. This allows the agency to further expand the reach into the community to show that domestic violence still exists and that services are still available.

Services available today include: emergency shelter, 24-hour support and crisis management hot-line, individualized and group counseling, art therapy, court advocacy, peer support, aftercare, education and referrals. To build community awareness, educational presentations are available to civic organizations, schools, churches, or any interested group. The agency also provides "Healthy Relationship" presentations to Lake and Geauga County schools (elementary through college). All services are provided for free regardless of economic income. WomenSafe is one of only two of the nearly 80 domestic violence programs in the State of Ohio whose programs are fully certified by the Commission on Accreditation for Rehabilitation Facilities (CARF) and the Ohio Department of Mental Health. The agency is also certified by Medicaid for its diagnostic assessment, counseling and community support programs. We are also proud to be SafeZone Certified by the Buckeye Region Anti-Violence Organization, which offers a comprehensive cultural competency training and technical assistance to increase safety and resources for survivors of domestic violence, sexual violence, and stalking with the LGBTQI communities.

2019 DISTINGUISHED PHYSICIAN OF THE YEAR

SAMIR KAPADIA, MD

Dr. Samir Kapadia, is the Chairman of the Department of Cardiovascular Medicine at the Cleveland Clinic. In this capacity, Dr. Kapadia leads the team of cardiologists for the Sydell and Arnold Miller Family Heart & Vascular Institute. Cleveland Clinic has retained its position as the nation's No. 1 hospital for cardiology and heart surgery for 25 consecutive years, according to U.S. News & World Report's annual hospital rankings.

Dr. Kapadia specializes in percutaneous treatment for valve disease, including transcatheter aortic valve replacement (TAVR) and specialized clips for mitral regurgitation, as well as complex coronary interventions and other structural heart disease interventions, including paravalvular leak, atrial septal defect (ASD) and patent foramen ovale (PFO) closure.

Dr. Kapadia joined the staff as an interventional cardiologist in 2003. He served as the director of the Sones Cardiac Catheterization Laboratories since 2009 and as section head of Invasive and Interven-tional Cardiology since 2014. He earned his medical degree with highest honors from Smt. NHL Mu-nicipal Medical College in Gujarat, India, in 1989. In 1993, Dr. Kapadia completed his internship and residency in internal medicine at Baylor College of Medicine, in Houston, where he was named Out-standing Resident. He also completed fellowships in cardiology in 1998 and interventional cardiology in 2000 at Cleveland Clinic, where he also served as Chief Interventional Fellow. Following the com-pletion of his training, Kapadia served from 2000 to 2003 as an interventional cardiologist at the VA Puget Sound Health Care System, in Seattle, and held an academic appointment at the University of Washington.

Dr. Kapadia is an active member of various national cardiology societies, including the American Heart Association, American College of Cardiology and Society for Vascular Medicine. He has au-thored over 450 peer-reviewed articles that have been published in leading journals, including the New England Journal of Medicine and the Journal of American Medical Association and is a leader in numerous major cardiovascular trials, including the recent PARTNER 3 and COAPT investigations. He has 15 patents and received many awards and honors over the years, including numerous innovation awards.

He has edited Cardiology Board Review Book and the Textbook of Interventional Cardiology. He has also served as an Associate Editor of JACC Intervention Journal.

Dr. Kapadia is a life member of AIPNO and has been actively involved in the academic mission of AIPNO. He has delivered several CME programs for AIPNO over the years.

RESEARCH SHOWCASE COMMITTEE REPORT


Beejadi Mukunda, MD


Mona Gupta, MD


Harbhajan Parmar, MD


Rupesh Raina, MD

Dear Friends,

Thank you for the honor of serving as the Chairman of the Research Showcase for AIPNO. We started this signature event six years ago in an attempt to further the purposes of AIPNO which includes "To conduct educational programs to acquaint the members with clinical, scientific and other developments in the field of medicine."

The Sixth Research Showcase in 2018 was a grand success with close to seventy abstracts presented by researchers ranging from high school students to university professors. Money was raised to support Medical Yatra to help take two residents to India. Abstracts were printed in the program booklet and cash prizes were awarded. Younger generations' participation in AIPNO has been achieved with great enthusiasm. This year we are further expanding the program. I am thankful to Mona Gupta, MD, for enthusiastically co-chairing this committee and helping in our goal to take make this event constantly better. Many thanks to the Executive Committee members and the Board Members for their support. Special thanks to Rahul Damania, MD, for his enthusiastic support to all aspects of Research Showcase.

As we celebrate the 36th Anniversary of AIPNO, I am proud to chair this innovative committee. Establishing research grants in the future, bringing more researchers into this great organization, helping younger physicians, nurses and administrators to network and mentor new members are the goals of this committee. This further broadens the purposes of AIPNO. I would like to thank all the members of AIPNO for supporting me to establish the Research Showcase, especially Raja Shekar, MD and Umesh Yalavarthy, MD. I am grateful to all the healthcare systems for supporting this effort and especially to Mr. Gary Robinson, CEO of CDC for his generous support in being the Presenting Sponsor of Research Showcase this year. Many thanks to all the sponsors and supporters, we are in the process of establishing an AIPNO research grant with your help and support. Heartfelt thanks to Ms. Binnie Eiger, Executive Assistant and to Mr. Manohar Daga, for providing accounting oversight.

I am grateful to my children Amrita and Krishna for allowing me to continue to work for AIPNO and to my wife Deepa for all her support.

Sincerely,
Beejadi Mukunda, MD Chairman,
Research Showcase Committee Chairman,
Board of Trustee, AIPNO

Dr. Gupta: Research Showcase has continued to improve over past few years e.g. moving to web-based platform, improving the organizational structure etc. Increasing number of high quality abstracts and posters are presented each year. I would like to thank the board of trustees, executive committee, research show-case participants and judges in making our 6th Research a huge success. Special thanks to Dr. Rahul Damania for his enthusiastic support.

I would like to thank my husband Dr. Vijay Rastogi and my sons Sunay Rastogi and Krivam Rastogi for their conditional support and allowing me to work for AIPNO.

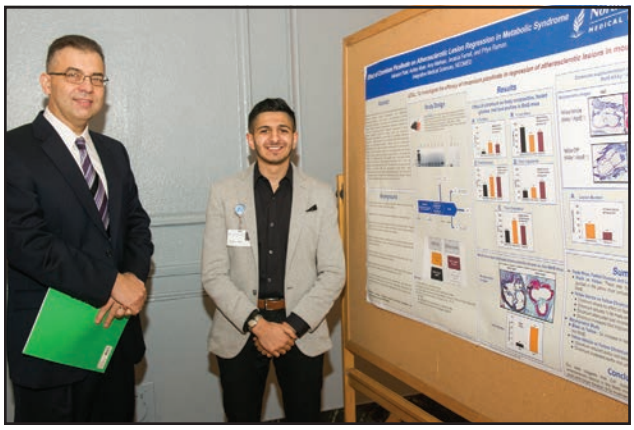
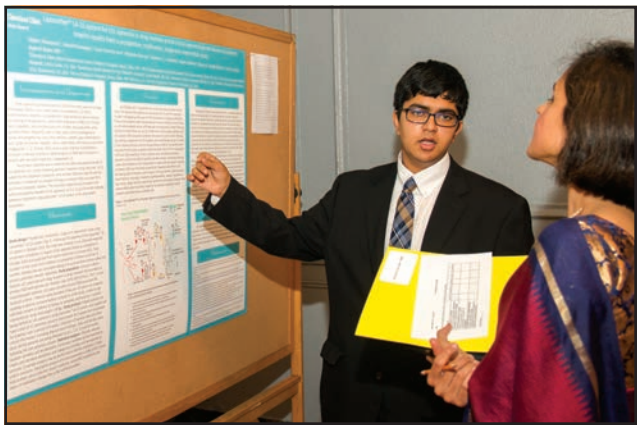
Sincerely,

Mona Gupta, MD,
Co-chair Research Showcase, AIPNO,
Chair, Public Relations Committee,
AIPNO, Immediate Past-President, AIPNO.



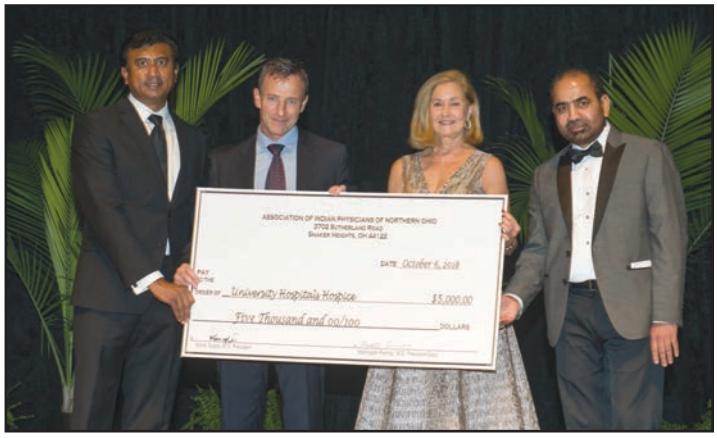





35th


ASSOCIATION OF INDIAN PHYSICIANS OF NORTHERN OHIO
DATE October 6, 2018
Mayor Frank Jackson Scholarship Fund
$10,000.00
Ten Thousand and 00/100
DOLLARS


ASSOCIATION OF INDIAN PHYSICIANS OF NORTHERN OHIO
DATE October 6, 2018
University Hospitals Hospice
$5,000.00
Five Thousand and 00/100
DOLLARS


35th


35th


35th


35th


35th


35th


35th

With sincere gratitude to those who made Chiraag, Annual Dinner and the Research Showcase 2019 Fundraising Dinner a Success…

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Centers for Dialysis Care

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PUBLIC RELATIONS COMMITTEE REPORT

"In the long history of humankind, those who learned to collaborate and improvise most effectively have prevailed " - Charles Darwin

Dear Friends,

Heartfelt gratitude and thank you for the honor of serving as the Chair of the Public Relations Committee for AIPNO to further the noble mission, to encourage Education, Philanthropy and Access to Health Care. We strive to use the resources and knowledge of AIPNO for the health and welfare of the community we serve. We have successfully conveyed our mission amongst the traditional donors and the general public. We have worked hard with local and national organizations to make AIPNO more family friendly and to involve younger physicians.

We proudly hosted the first ever and biggest event in AIPNO's history, the Fundraiser "Mystic India", an internationally acclaimed Bollywood Dance Spectacular in 2018 at the Playhouse Square Key Bank State Theatre. Benjamin Rose Institute on Aging was our major beneficiary. I am proud to say that over 1400 people attended the event making the show a grand success. Based on the tremendous and enthusiastic response we received after our first show, we all believe that "AIPNO Show" is an excellent medium to highlight AIPNO and further enhance our mission. I want to thank Dr. Hari Balaji and Dr. Beejadi Mukunda for their enthusiastic support to all aspects of the show. I want to thank all our sponsors and other people who made this event possible and without whom this event wouldn't have been possible. AIPNO members graciously volunteered to sponsor this event as many others have done it in the past for similar causes. Many thanks to all the sponsors and supporters esp. Dr. Beejadi Mukunda, Dr. Hari Balaji, Dr. Dharmesh Mehta, Dr. Harbhajan Parmar, Dr. Corattur Natesan, Dr. Vijay Rastogi, Dr. Umesh Yalavarthy, Dr. Satnam Sandhu, Dr. Ravi Krishnan. Special thanks to Dr. Sangeeta Mehta for her overall support. I am grateful to all the eminent business leaders for generously supporting this effort including R.W. Baird & Co. - The BCJC Group, Cognizant, Legacy Health Services, Merrill Lynch, Heartland of Willoughby, Key Private Bank, Margaret Wong and Associates and TIU Consulting for their design, graphics and website work for this great cause. Special thanks to AIPNO executive committee especially Dr. Akhilesh Chowksi, Dr.. Corattur Natesan, Dr. Saloni Khatri and Dr. Amit Patel, Friends of AIPNO, Local community organizations, Indian stores/restaurants, TV media, Lotus, India International and Cleveland magazine.

We also celebrated first ever family friendly New Year's Eve 2018, which was a tremendous success. It was a sold-out event with more than 500 community members including children celebrating to welcome the New Year. Many thanks to executive committee especially Dr. Akhilesh Chowksi, Dr. Harbhajan Parmar, Dr. Dharmesh Mehta, Dr. Corattur Natesan

We started a new tradition - a joint collaboration for the event" Holi Ke Rang Apno Ke Sang" with ICAGA and Marwari Association of Ohio which was a great success and once again a sold-out program. Special thanks to Dr. Sangita Mehta

This year we organized a family friendly picnic, once again well attended by the entire Cleveland community included kids. We played basketball, cricket and other games and enjoyed delicious food. Our toddlers enjoyed the swings. We organized our first AIPNO free health fair for the entire Cleveland community. Both events were a huge success encouraging us to continue to organize these kinds of events in future. Thanks to Dr. Harbhajan Parmar, Dr. Rupesh Raina, Dr. Dharmesh Mehta, Dr. Raj Vallabhaneni, Dr. Akhilesh Rao for their continued support.

This is the beginning of a movement and with the support of our AIPNO family, we look forward to bringing such quality family friendly collaborative events and entertainment including shows from across the globe in the future. We have a very vibrant AIPNO team and Indian community leadership committed to this cause. I would like to reiterate that AIPNO is for all of us including non-physicians who share our mission. Collaboration with community organizations that share our vision and to involve younger members to strengthen our cause is the goal of this committee. I would like to request entire AIPNO membership to please let us know if they have innovative ideas to further enhance our public relations in the community.

I am thankful to Dr. Harbhajan Parmar, Dr. Hari Balaji and Dr. Dharmesh Mehta for enthusiastically supporting me to establish this innovative committee. Many thanks to executive committee, Board of Trustees and all the members of AIPNO for supporting me to establish this committee. Heartfelt gratitude and thanks to Ms. Binnie Eiger, Executive Assistant who is the pillar of our organization and Mr. Manohar Daga, for the accounting oversight.

I would like to take this opportunity to thank my husband Dr. Vijay Rastogi and my 2 sons Sunay and Krivam Rastogi for their huge sacrifice, love, and unconditional support and allowing me to work for AIPNO.

Sincerely,
Mona Gupta, MD, AGSF
Chair Public Relations Committee
Chair Awards and Recognition Committee
Co-Chair Research Showcase
Immediate Past-President, AIPNO

Public Relations photos: New Year's Eve 2018

Public Relations photos: New Year's Eve 2018

Public Relations photos: New Year's Eve 2018

Public Relations photos: New Year's Eve 2018

Public Relations photos: New Year's Eve 2018

Public Relations photos:
Mystic India, Holi, Health Fair, Naach Di Cleveland

Public Relations photos: TV media, picnic

Dingus and Daga, Inc.
Certified Public Accountants
®

ACCOUNTANT'S COMPILATION REPORT

Board of Trustees and Members of the
Finance Committee
Association oflndian Physicians of Northern Ohio
Cleveland, Ohio

Management is responsible for the accompanying financial statements of Association of Indian Physicians of Northern Ohio (a non-profit organization), which comprise the statement of financial position as of December 31, 2018, and the related statement of activities for the year then ended in accordance with accounting principles generally accepted in the United States of America. We have performed a compilation engagement in accordance with Statements on Standards for Accounting and Review Services promulgated by the Accounting and Review Services Committee of the AICPA. We did not audit or review the financial statements nor were we required to perform any procedures to verify the accuracy or completeness of the information provided by management. Accordingly, we do not express an opinion, a conclusion nor provide any form of assurance on these financial statements. ·

Management has elected to omit substantially all of the disclosures and the statement of cash flows required by accounting principles generally accepted in the United States of America. If the omitted disclosures and the statement of cash flows were included in the financial statements, they might influence the user's conclusions about the Organization's financial position, changes in net assets and cash flows. Accordingly, the financial statements are not designed for those who are not informed about such matters.

Supplementary Information

The supplementary information contained in Schedules I and II is presented for purposes of additional analysis and is not a required part of the basic financial statements. The information is the representation of management. The information was subject to our compilation engagement, however we have not audited or reviewed the supplementary information, and, accordingly, do not express an opinion, a conclusion, nor provide any form of assurance on such supplementa1y information.

We are not indepedent with respect to Association of Indian Physicians of Northern Ohio.

Dingus and Daga, Inc.

Shaker Heights, Ohio
April 24, 2019

20600 Chagrin Boulevard · Suite 701 · Shaker Heights · Ohio · 44122 · 216.561.9200

ASSOCIATION OF INDIAN PHYSICIANS OF NORTHERN OHIO
STATEMENT OF FINANCIAL POSITION
December 31, 2018

(With summary financial information for 2017)

	Without Donor Restrictions	With Donor Restrictions	Totals 2018	Totals 2017
ASSETS				
Cash	$ 56,803	$ 156,141	$ 212,944	$ 234,852
Contributions receivable	19,750		19,750	3,627
Prepaid expenses			-	9,750
Investments	209,938	1,096,944	1,306,882	1,416,468
Due from unrestricted fund		39,676	39,676	48,958
Due from restricted fund	9,582		9,582	-
TOTAL ASSETS	$ 296,073	$ 1,292,761	$ 1,588,834	$ 1,713,655
LIABILITIES AND NET ASSETS				
Accounts payable	$ 33,968		$ 33,968	$ 3,700
Accrued and withheld payroll taxes	2,763		2,763	1,676
Deferred revenue			-	5,000
Accrued contribution		$ 5,000	5,000	35,000
Due to unrestricted fund		9,582	9,582	-
Due to restricted fund	39,676		39,676	48,958
TOTAL LIABILITIES	76,407	14,582	90,989	94,334
NET ASSETS				
Unrestricted	10,800		10,800	5,261
Board designated functioning as an endowment	208,866		208,866	226,246
Temporarily restricted		195,817	195,817	231,026
Permanently restricted		1,082,362	1,082,362	1,156,788
	219,666	1,278,179	1,497,845	1,619,321
TOTAL LIABILITIES AND NET ASSETS	$ 296,073	$ 1,292,761	$ 1,588,834	$ 1,713,655

See accountant's compilation report.

ASSOCIATION OF INDIAN PHYSICIANS OF NORTHERN OHIO
STATEMENT OF ACTIVITIES
Year Ended December 31, 2018

(With summary financial information for the year ended December 31, 2017)

	Without Donor Restrictions	With Donor Restrictions	Totals 2018	Totals 2017
REVENUE				
Medical Yatra contributions		$ 49,355	$ 49,355	$ 68,124
Chiraag contributions		9,250	9,250	6,500
Other contributions			-	1,051
Membership dues	$ 5,575		5,575	1,550
Annual dinner		130,730	130,730	124,550
Special events	98,483		98,483	3,895
Investment income	(8,783)	(46,307)	(55,090)	216,103
Satisfaction of restrictions:				
Investment fees on donor restricted funds	5,393	(5,393)		
Donations/scholarships	80,450	(80,450)		
Transfer for operations (2%)	20,969	(20,969)		
Medical Yatra direct expenses	29,632	(29,632)		
Research showcase direct expenses	116,219	(116,219)		
TOTAL REVENUE	347,938	(109,635)	238,303	421,773
EXPENSES				
Medical Yatra	29,632		29,632	4,179
Continuing education costs	3,069		3,069	-
Annual dinner	107,735		107,735	84,448
Special events	77,608		77,608	12,134
Scholarships and donations	96,000		96,000	26,950
Wages	19,976		19,976	18,192
Insurance	1,375		1,375	1,375
Professional fees	8,339		8,339	7,278
Taxes	1,740		1,740	1,737
Office expenses	4,549		4,549	3,666
Bank and investment fees	8,852		8,852	8,754
Local travel	295		295	541
Telephone	609		609	606
TOTAL EXPENSES	359,779	-	359,779	169,860
Change in net assets	(11,841)	(109,635)	(121,476)	251,913
NET ASSETS - Beginning	231,507	1,387,814	1,619,321	1,367,408
NET ASSETS - Ending	$ 219,666	$ 1,278,179	$ 1,497,845	$ 1,619,321

See accountant's compilation report.

ASSOCIATION OF INDIAN PHYSICIANS OF NORTHERN OHIO
SCHEDULE I - SATISFACTION OF RESTRICTIONS
Year Ended December 31, 2018

		Temporarily Restricted		Permanently
	Unrestricted	Research Showcase	Medical Yatra	Restricted Endowment
FROM PERMANENTLY RESTRICTED ENDOWMENT				
Investment fees	$ 5,393			$ (5,393)
Donation/scholarships	11,000			(11,000)
Transfer for operations (maximum 2% of average endowment)	20,969			(20,969)
	37,362			(37,362)
FROM TEMPORARILY RESTRICTED				
Medical Yatra direct expenses	29,632		$ (29,632)	
Medical Yatra scholarships and donations	48,200		(48,200)	
Annual meeting direct expenses	116,219	$ (116,219)		
Annual meeting scholarships and donations	21,250	(21,250)		
	215,301	(137,469)	(77,832)	
TOTAL	$ 252,663	$ (137,469)	$ (77,832)	$ (37,362)

See accountant's compilation report.

ASSOCIATION OF INDIAN PHYSICIANS OF NORTHERN OHIO
SCHEDULE II - MANAGEMENT AND GENERAL EXPENSES
Years Ended December 31, 2018 and 2017

	Totals	
	2018	2017
Wages	$ 14,976	$ 15,192
Professional fees	8,339	7,278
Office expenses	4,549	3,666
Scholarships and donations	15,550	2,000
Taxes	1,358	1,508
Insurance	1,375	1,375
Telephone	609	606
Local travel	295	541
Bank and investment fees	289	96
TOTAL	$ 47,340	$ 32,262

See accountant's compilation report.

HUMANITARIAN SERVICES COMMITTEE REPORT 2019

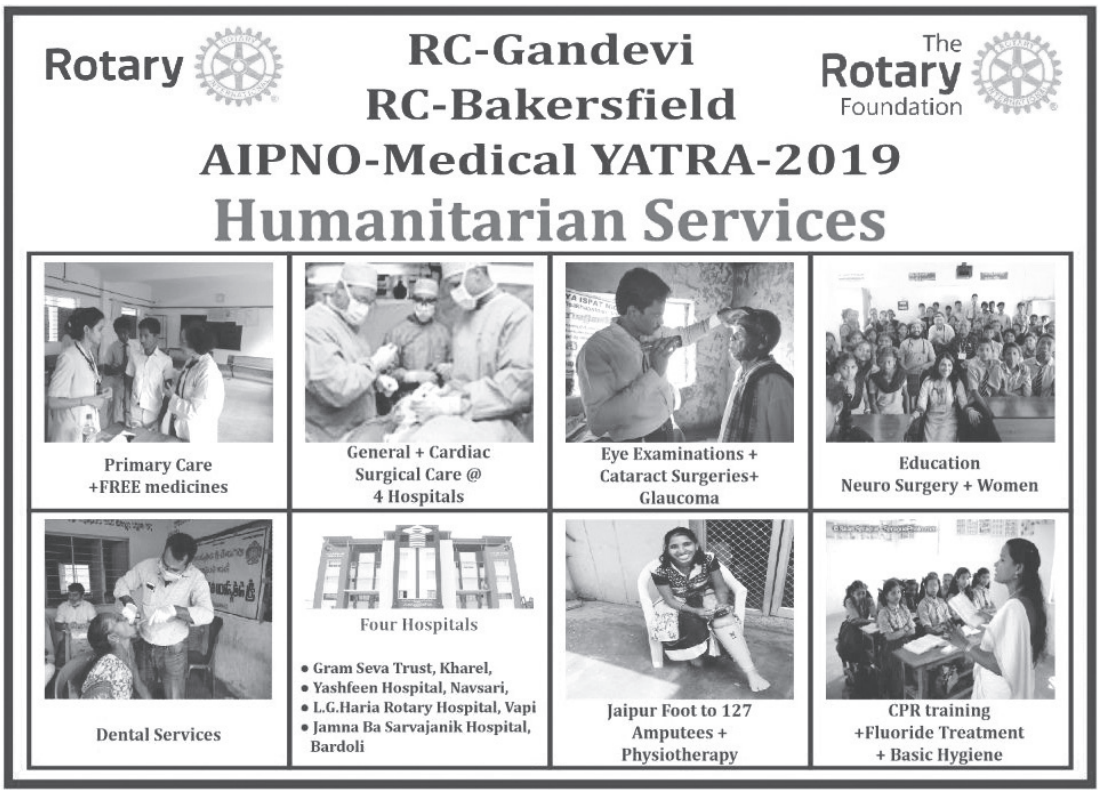
Explosions of its Services

Jaya & Ramesh Shah

"As you grow older, you will discover that you have two hands — one for helping yourself, the other for helping others."
- Audrey Hepburn

Year 2019 will be remembered in the history when multiple explosions of services took place for indigent population of rural India.

Primary Care diagnostic services with FREE medicines has been our basic building block for last 18 yrs. Then we added Dental Service, Eye Examinations with Cataract Surgeries. In 2018 we added Gift of Mobility-'Jaipur Foot' for amputees. In 2019, with help of Rotary Clubs & Rotary International foundation, we managed to get **$100,000 Global Grant** to do **320 Surgeries** – General & Cardiac – thru five local hospitals. Yatra expanded its educational programs to 5 schools, teaching school children personal hygiene, good dental hygiene, CPR training to save lives etc.



Bengaluru YATRA-2019: Two Mobile Vans- Ophthalmic & Women's Health- have been great assets to 'Take Hospital to Patients' initiatives. Three days we provided services examining women for potential cancer, biopsy and early detection of cancer. This is prevention and educational initiatives.

With Rotary push for sustainable solutions to long term health, Medical YATRA has been instrumental in initiating programs in Schools for health of children.

HUMANITARIAN SERVICES COMMITTEE REPORT 2019 - continued

We have been honored with TWO (2) Non-profit organizations joining with us in expanding our services- **Playful India** and **Million Dollar Round Table Foundation**.

Upcoming Events:

- **Medical YATRA-2020** in Ludhiana/Amritsar, Punjab
- **Philanthropia -** Dec. 9, 2019 @ Landerhaven

Medical YATRA Report Card 2001-2019

No. of patients served in India:	310,000
No. of countries visited:	10
No. of physicians inspired:	110
No. of Volunteers inspired:	110
Supported by Foundations:	5
Supported by Pharmaceutical cos.	10
States visited in India:	12

(Gujarat, Rajasthan, Madhya Pradesh, Karnataka, Andhra Pradesh Tamilnadu, Orissa, Uttarkhand, Maharashtra, Kerala, Punjab)

Awards: **FICA person of the Year**
Inducted in Cleveland Hall of Fame
Distinguished Physician of the Year
India Association of Greater Akron

NEW AWARDS:
India Association of Greater Akron
Ahuja Foundation
Gurdwara Guru Nanak Foundation Richfield
Guru Gobind Sikh Society of Cleveland
Playful India California
Million Dollar Round Table Foundation

Medical YATRA-2019

-GANDEVI, Guj. Jan. 11-18

-BENAGALURU, K. Jan. 19-25

-LUDHIANA, Punjab Jan. 26-29

Oscar Trophy for **"Period. End of Sentence"** Documentary

(Sanitary Pads Revolution)

We are humbled to be Part of it. Medical YATRA started making Sanitary Pads in Kharel, Guj. in 2016; since then we have installed @ Five-5-locations in India...in 2018, we installed in Ludhiana, P.

That has helped so many hundreds of girls/women to prevent infection & have better personal hygiene boosting their self -esteem.

Medical Yatra @ Gandevi, Guj. @ glance

HOST	Rotary Cub of Gandevi, Guj. – 10 yrs. of successful, productive Partnership
OUR Mission	H…To Provide Diagnostic Services +FREE Medicines E…Education & Training L…Long term sustainable Solutions (Surgery+ Equipment) P…Prevention Program
Supporting NGOs	RC-Navsari, RC-Amalsad, Rc-Bardoli, RC-Vyara, RC-Abrama, RC- Chikhali, RC-Shivarimal RC-Bakersfield Gandevi Taluka Seva Samaj, Gnadevi Seva Samaj of N. USA
Hospital Partners	Haria Hospital, Vapi, Gram Seva Hospital, Kharel, Jamanaben S. Hospital, Bardoli, Alipore Hospital, Chikhali Yusufeen Hospital, Navsari, Rotary Eye Institute, Navsari,
Clinics	Gadat, Amalsad, Kharel, Abrama, Alipore, Bardoli, Vyara, Shivarimal
NRI Physicians NRI Volunteers	12 10 = 22
SERVICES: Patients Exam. Surgeries Conferences Jaipur Foot	 General- 2,364 + Children 435 + Women 311 = Eye 2,517 = 5,627 Heart 141 + General 464 +Cataract 340 + other 99 = 1,044 Women 85, NeuroScience-200 89
Schools Education Programs	Dhaneri, Timba, Ambheta, Ajrai CPR Training, Dental Hygiene, Sanitary Pads

Medical YATRA-2019

ROTARY EYE INSTITUTE
SMT. LILAVATI MOHANLAL SHAH EYE HOSPITAL
NAVSARI-GUJARAT-INDIA.

Eye Examinations & Corneal Transplantation

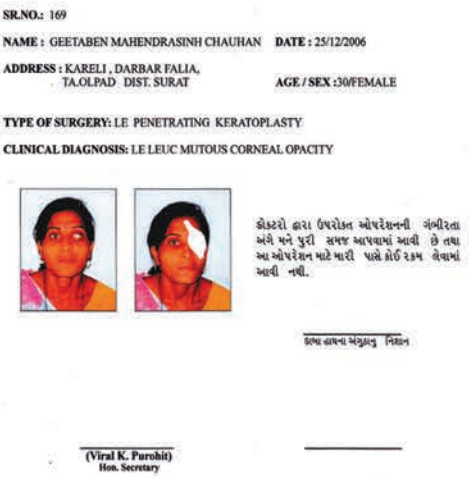
@ Rotary Eye Institute, Navsari, Guj.

Corneal transplantation also known as corneal grafting, is a surgical procedure where a damaged or diseased cornea is replaced by donated corneal tissue (the graft). When the entire cornea is replaced it is known as **penetrating keratoplasty** and when only part of the cornea is replaced it is known as **lamellar keratoplasty**. Keratoplasty simply means surgery to the cornea. The graft is taken from a recently dead individual with no known diseases or other factors that may affect the chance of survival of the donated tissue or the health of the recipient.

Rapid assessment of avoidable blindness Surveys Conducted in the year 2006-07 showed that prevalence of blindness in India has decreased from **1.1% to 1%**[1], but still there are many issues and corneal blindness is one of them. Approximately **12 million corneal blinds** [2] in the country, many others have visual impairment due to corneal diseases.

Eye Camp Organised under Medical Yatra

Sr. No	Date	Place	Screening	Operation 1500	Spe. 4666 96/-
1	12.01.2019	Anaval	322	63	187
2	12.01.2019	Amalsad	174	47	97
3	12.01.2019	Gadat	183	40	70
4	13.01.2019	Kharaabrama	462	98	307
5	13.01.2019	Kharel	181	57	90
6	15.01.2019	Bardoli	101	22	46
7	15.01.2019	Alipore	224	62	59
8	16.01.2019	Vyara	241	36	102
9	16.01.2019	Gandevi	215	66	110
10	17.01.2019	Shivanaimal	735	71	431
		Total	**2838**	**562**	**1499**


SR.NO.: 169
NAME : GEETABEN MAHENDRASINH CHAUHAN DATE : 25/12/2006
ADDRESS : KARELI , DARBAR FALIA, TA.OLPAD DIST. SURAT AGE / SEX :30/FEMALE
TYPE OF SURGERY: LE PENETRATING KERATOPLASTY
CLINICAL DIAGNOSIS: LE LEUC MUTOUS CORNEAL OPACITY
ડોક્ટરો દ્વારા ઉપરોક્ત ઓપરેશનની ગંભીરતા અંગે મને પુરી સમજ આપવામાં આવી છે તથા આ ઓપરેશન માટે મારી પાસે કોઈ રકમ લેવામાં આવી નથી.
(Viral K. Purohit)
Hon. Secretary

Medical YATRA-2019

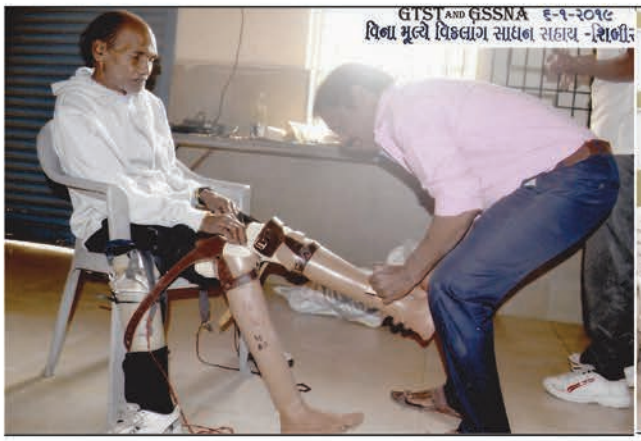
Health &
Stress Management &
CPR Training

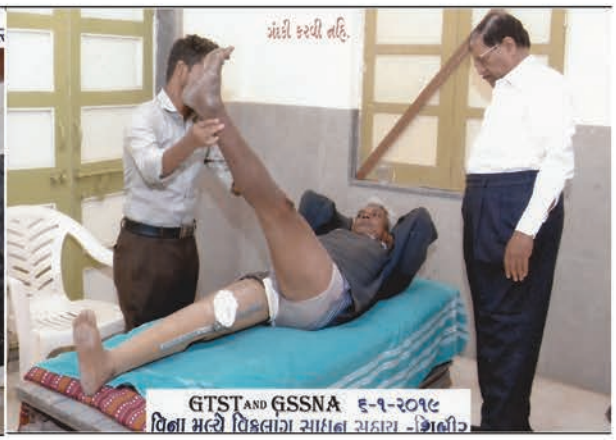
Women's Conference

Medical YATRA-2019

'Gift of Mobility'-Jaipur Foot (with Physiotherapy)

Our Partners: Gandevi Taluka Seva Trust, Gandevi Seva Samaj of N. America
Divyang Foundation, Navsari
Professionals: Ratna Nidhi Trust, Mumbai
Executive D. : Dr. Mohan Patel
No. of Patients ; 87
(30 Calipers, 38 J. Foot, 9 Crutches, 6 Wheel Chairs, 4 Hands)





Medical YATRA-2019

AIPNO- Medical Yatra and Rotary club, in addition to health initiative, added 'Knowledge Dispersion' initiative to their medical pilgrimage this year. Three neurosurgery CMEs were organized under this initiative. Dr. M. Deogaonkar from Ohio State University discussed t Neurosurgical advances in the field of surgery for movement disorders, pain and spasticity with the local physicians.

I.CME was held at Mahavir Cardiac Hospital in Surat on the 11th of January was hosted by Association of Physicians, Surat. About 80 local physicians, neurologists and residents attended & interacted with him.

II.CME was at the Haria Memorial Rotary hospital in Vapi on Jan 16 th and about 100 physicians and nurses attended .

III. CME was at Rangadore Memorial Hospital in Bengaluru on January 19th about 40

Congratulations

TO THE
RESEARCH SHOWCASE 2018 WINNERS

CLINICAL RESEARCH & QUALITY IMPROVEMENT

First Place: Snehi Shah
Second Place: Adam Lauko
Third Place: Naveen Dhawan

CASE REPORTS

First Place: Amir Mansour
Second Place: Aditi Mittal
Third Place: Randol Kennedy

BASIC SCIENCES

First Place: Alisha Gupta
Second Place: Ryan Edelbrock
Third Place: Pallavi Sharma

SPORTS COMMITTEE REPORT

Chair: Arun Gupta, MD

Dr. Arun Gupta, Chair of the AIPNO Sports Committee organized the second annual "H.P. Sundaresh Memorial Golf Outing" on June 30, 2019. The event took place at Signature of Solon Country Club in Solon, OH. Forty-seven players golfed on a beautiful sunny day. The golfers enjoyed a catered lunch from Saffron Patch, the driving range and then hitting the links. The sports committee would like to thank the sponsors for this event: Major Sponsor, Doug Crandall of the BCJC Group, Southwest General, UH Parma Medical Center, South Pointe Hospital, Regency Hospital and CC Regional.

After golfing the players, spouses and other AIPNO members gathered at Saffron Patch Restaurant in Shaker Heights for dinner, awards and camaraderie.

AIPNO'S INAUGURAL HEALTH FAIR REPORT - 2019

The first AIPNO health fair was held on August 24, 2019 at Willow Praise Church in Wickliffe and was sponsored by Uni-versity Hospitals.

Ten Examination Booths were available. This year about 63 community members received services from Physicians in various specialties and subspecialties: Internal Medicine, Endocrinology, GYN -Women's Health, Dentistry, Cardiology, Nephrology, Pulmonology, Cardiology, Vascular Surgery, Podiatry.

Laboratory and EKG services were provided by Lake Heart Center, LLC. I thank Dr. Raj Vallabhaneni for providing these services and also being our cardiologist for the health fair. Audiology services were provided by Holly's Hearing and Eye examinations were done by Walmart.

My heartfelt thanks to all the physicians who volunteered their time: Dr. Mona Gupta, Dr. Varinder Dhillon, Dr. Dharmesh Mehta, Dr. Manjinder Kaur, Dr. Vikram Rao, Dr. Akhilesh Rao, Dr. Vijay Rastogi and Dr. Rajvinder Parmar.

Special Thanks to Rev. Larry Bogenrief and Mr. Jeff Brown for their unsolicited support.

I owe gratitude to the team of volunteers for their help.

Also we are thankful to all volunteers and Bharat Patel for Audio-Visual services.

Dr. Harbhajan Parmar
President AIPNO

Deep Brain Stimulator Withdrawal Syndrome

H. Abuteer, J. Azar, A. Al-Armashi, I. Alsallamin, I. Abuhamdeh, Z. Alshanableh, K. Ravakhah.

Department of Internal Medicine, St. Vincent Charity Medical Center, Cleveland, Ohio.

Parkinsonism hyperpyrexia syndrome (PHS) is a neurologic emergency that mimics neuroleptic malignant syndrome. It commonly presents as systemic inflammatory response syndrome (SIRS). The most common trigger for PHS is reduction or withdrawal of anti-Parkinson's medications, especially levodopa. It was also reported in a few cases following deep brain stimulation (DBS) of the subthalamic nucleus (STN) surgery shortly after anti-Parkinson's medication was discontinued. Rare causes of PHS include DBS malfunction due to battery depletion which was reported only in few occasions. This case of PHS was due to DBS battery depletion that presented as sepsis, and was successfully treated with the administration of Dopamine agonists, intravenous fluids and changing the DBS battery.

The patient is a 67-year old female that was diagnosed with PD in 1991. Over the years, her treatment included levodopa/carbidopa and pramipexole, with poor control of her symptoms. In 2007, bilateral STN DBS was implanted, resulting in well controlled symptoms for the following seven years; however, the DBS battery was never replaced. The patient presented to the ER with high-grade fever, altered mental status, poor oral intake. She was febrile 38.5°C, had autonomic instability. Her physical exam was unremarkable except for diminished breath sounds in the lung bases. Also, neurologic exam demonstrated somnolence with lack of response to painful stimuli. Laboratory tests showed acute pre-renal failure with creatinine 123 μmol/L, hypernatremia 157 mmol/L, elevated creatine phosphokinase at 1015 U/L, leukocytosis 12,600/μL with a CRP of 1.6 mg/dl. Normal findings on lumbar puncture ruled out CNS infection. Respiratory viral swab and all other cultures came back negative. Later, th e patient was started on systemic antibiotics for possible pulmonary infection. Due to continued fevers and decreased consciousness, she underwent a whole-body CT which failed to localize a possible source of infection.

On day nine of admission, PHS was suspected due to non-resolving high fever, severe muscular rigidity, altered mental status, autonomic instability and elevated CK levels of 1615 U/L. The patient was treated conservatively; levodopa dose was tripled, with no clinical improvement. Given that the estimated DBS battery life is between three and five years, DBS withdrawal syndrome due to battery depletion was suspected. She underwent successful IPG replacement with rapid clinical improvement within a few hours. The following day, patient's symptoms resolved, and all lab values normalized. The patient's rigidity and mental status improved to full recovery until discharge.

Malignant DBS withdrawal syndrome, is a rare disease exclusive to patients with advanced PD as a result of abrupt cessation of DBS activity. Treatment by augmenting the dopaminergic medications should be considered temporary, while immediate DBS restoration is considered the definitive treatment, preventing an otherwise fatal outcome.

Palvir Baadh, BS[1,2]; Carey Shive, PhD [1,2]; Donald Anthony, MD, PhD[1,2]
[1]Case Western Reserve University School of Medicine, Division of Infectious Diseases and HIV Medicine, [2]Louis Stokes Cleveland VA Medical Center

The Role of sCD14, sCD163, IP10, and IL-6 in Immune Dysfunction During HCV infection and Aging with a View into Clinical Parameters

Abstract:

Hepatitis C, a hepatic viral infection, affects millions of individuals worldwide and is recognized as a global health issue. This infection eventually progresses to a chronic liver disease state leading to complications such as cirrhosis and hepatic carcinomas. Although significant medical advances have occurred for treatment of Hepatitis C virus (HCV), many patients remain untreated and previous liver damage often persists and contributes to morbidity. It is known that chronic inflammatory conditions due to HCV infection, and others including HIV infection, diabetes mellitus, and autoimmune diseases are associated with cardiovascular disease. Understanding the underlying specific inflammatory conditions within the HCV population that may be contributing to CVD may lead to better patient health management and outcomes. Current studies in our laboratory have found a link between inflammation and poor vaccine responses in HCV and HIV infected participants. We have also found that in HCV infection AST levels are positively associated with plasma levels of sCD14 and sCD163 and serum albumin levels negatively associate with plasma IL-6 levels. In our current study, we propose that increased plasma levels of sCD14 and sCD163, both markers of monocytes/Kupffer cell activation are correlated with coronary artery disease (CAD) and red cell distribution width (RDW) in chronic HCV infection and that older age may also contribute to monocyte/Kupffer cell activation. Secondly, we will examine soluble markers of inflammation (IL-6 and IP10) and their association with liver health in HCV infection and the elderly.

Integrating CT Radiomic & Quantitative Histomorphometric Whole Slide Image Features Predicts Disease Free Survival in ES-NSCLC

Kaustav Bera[1], Pranjal Vaidya[1], Xiangxue Wang[1], German Prada[1], Amit Gupta[2], Pingfu Fu[3], Pradnya Patil[4], Humberto Choi[5], Vamsidhar Velcheti[6], Anant Madabhushi[1,7]

1 – Department of Biomedical Engineering, Case Western Reserve University
2 – Department of Radiology, University Hospitals Cleveland Medical Center
3 – Department of Population and Quantitative Health Sciences, CWRU
4 – Department of Hematology & Oncology, Cleveland Clinic
5 – Respiratory Institute, Cleveland Clinic
6 – Department of Thoracic Oncology, Cleveland Clinic
7 – Louis Stokes VA Medical Center, Cleveland, Ohio
Email – kxb413@case.edu

No conflicts of interest to be declared

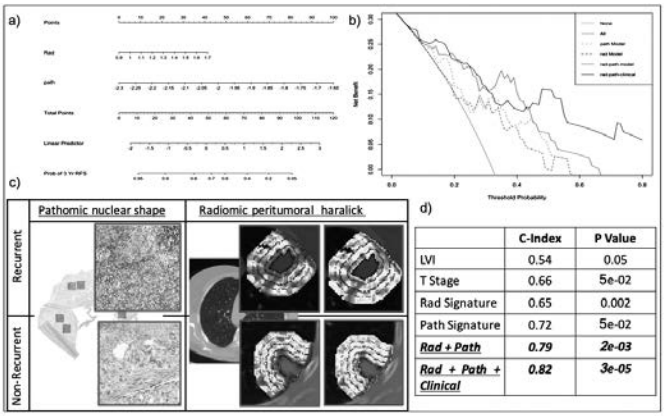
Objectives: Integration of computer extracted quantitative features from routine radiographic as well as pathology tissue images can provide a non-invasive way to stratify patients based on their risk of recurrence in early stage non-small cell lung cancer patients treated with curative resection.

Background: Early-Stage non-small cell lung cancer (ES-NSCLC) accounts for approximately 40% of NSCLC cases, with 5-year survival rates varying between 31-49%. Radiomic textural features from pre-treatment CT scans and QH features from H&E stained WSIs have been shown to be independently prognostic of outcome. With diagnostic CT scans and surgical resection, the standard of care in ES-NSCLC, in this work we seek to take a multimodality approach using routine imaging to improve the predictive performance in determining DFS following resection.

Methods: A retrospective chart review of Stage I and II (ES-NSCLC) pts undergoing surgical resection between 2005-14 with available CT and resected tissue yielded 70 pts. A total of 248 radiomic CT textural features from inside the tumor (Intratumoral –IT) and outside the tumor (Peritumoral – PT) and 242 QH features related to the nuclear shape, texture and spatial orientation and architecture from H&E WSI were extracted. We developed two risk models, Radiomic and QH using the most stable, discriminative and uncorrelated features from CT and WSI respectively determined by Lasso-regularized Cox regression to predict Disease free survival (DFS). Model performances were analyzed using Hazard Ratios (HR), Concordance Index (C-index) and Decision curve analysis. We built a nomogram to calculate the DFS based around the individual models as well as an integration of the QH and Radiomic models.

Results: Top 6 Radiomic features included 2 IT and 4 PT features from the Haralick and Collage families. The QH model comprised 6 nuclear shape and graph features. In predicting DFS, While the Radiomic model had a HR of 2.4 ($p < 0.01$) with C-index – 0.67, the QH model had HR – 3.1 ($p < 0.01$) with C-index – 0.74. Integration of the Radiomic and QH model yielded a C-index of 0.78 ($p < 0.01$). After addition of prognostic clinical factors (LVI, AJCC stage) to the model, the C-index was 0.80, almost doubling either modalities alone. The constructed nomogram visualized the apparent benefits of the three models while a decision curve clearly demonstrated the increased benefit of combined integrated model.

Conclusion: Integration of CT-derived radiomic and tissue-derived QH features was found to show improved performance in predicting RFS when compared to either radiomics or QH alone.



	C-Index	P Value
LVI	0.54	0.05
T Stage	0.66	5e-02
Rad Signature	0.65	0.002
Path Signature	0.72	5e-02
Rad + Path	***0.79***	***2e-03***
Rad + Path + Clinical	***0.82***	***3e-05***

Figure: a) Nomogram representing integrated Rad-Path risk score for predicting DFS; b) Decision curve analysis showing net benefit for the integrated model. The combined Rad-Path-clinical model had the highest net benefit; c) QH nuclear shape feature and radiomic peritumoral Haralick feature heatmeps showing difference between high-risk and low-risk groups; d) Table for individual prognostic clinical factors, and integrated (Rad-Path and Rad-Path-Clinical models.

Novel CT Based Radiomic Features are Prognostic and Predictive of Benefit of Chemoimmunotherapy in Advanced Non-Squamous NSCLC

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No conflicts of interest

Objectives: Non-invasive CT-radiomic features can predict response and overall survival to novel chemoimmunotherapy in advanced non-squamous carcinoma of the lung

Background

Carboplatin, pemetrexed and pembrolizumab (C/P/P) is currently approved for patients with advanced non-squamous carcinoma of the lung (NS-NSCLC) based on superior survival outcomes noted in KEYNOTE-189. Since clinical benefit was observed across all PD-L1 expression categories, there are currently no robust predictive biomarkers that can identify subsets of patients likely to derive benefit from this regimen. We sought to evaluate whether radiomic features extracted from within and outside the nodule on pre-therapy CT scans could predict response to C/P/P.

Method

We retrospectively identified 52 patients with stage IV NS-NSCLC who received C/P/P. Of these, 6 were excluded because of non-evaluable thoracic lesions. Lung tumors were contoured on 3D SLICER software by an expert reader. Textural and shape radiomic features were extracted from intra/peritumoral regions using MATLAB® 2018b platform (Mathworks, Natick, MA). The primary endpoint of our study was RECIST response and secondary end point was overall survival (OS). A linear discriminant analysis classifier (LDA) was used to predict response across 100 iterations of threefold cross validation in the dataset. Performance of classifier on response was measured by area under receiver operating characteristic curve (AUC). To build the multivariate radiomic signature for OS, least absolute shrinkage and selection operator (LASSO) Cox regression model was used and a risk score was computed according to a linear combination of selected features. Patients were divided into high-risk or low-risk groups based on median risk score.

Result

The top five radiomic features (intra/peritumoral textural patterns) predictive of response to C/P/P were identified by mRMR feature selection method. LDA classifier using these features could discriminate responders from non-responders with an AUC of 0.77 ± 0.05.

The radiomic risk score was calculated using a linear combination of top six selected features from LASSO with corresponding coefficients. In a multivariate Cox proportional hazards model using a combination of clinicopathologic and radiomic features, the radiomics signature was found to be significantly associated with OS (averaged on 100 iteration of CV) (HR 10.42; 95% CI: 4.18-26; P = 4.92e-07). Kaplan-Meier survival analyses according to the radiomics signature risk-score showed significantly worse survival in the high-risk category.

Conclusion

Textural features within and outside the nodule on pre-treatment CT images of patients with NS-NSCLC treated with C/P/P were predictive of responses and OS. Additional validation of these quantitative image-based biomarkers in independent cohorts is warranted.

Short-chain fatty acids regulate regulatory T cells and intestinal pathology during oral mucosal infection.

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Abstract:

Complex interactions between the microbial flora and the host exert sophisticated means of immune tolerance and regulation mechanisms. One mechanism is by inducing the accumulation of regulatory T (Treg) cells. Here we show that the depletion of resident bacteria using antibiotics (Abx) causes oral and gut immunopathology during Oropharyngeal Candidiasis (OPC) infection. Abx treatment causes decrease in the frequency of Foxp3+ regulatory cells (T_{regs}) and IL-17A producing T cells, with a concomitant increase in oral tissue pathology. Although oral *C. albicans* (CA) is commonly controlled in the oral cavity, Abx treatment led to CA dependent oral and gut inflammation. The combination of short chain fatty acids (SCFA) partially controlled the pathology in Abx treated mice, correlating to an increase in the frequency of Foxp3+, IL-17A+, and Foxp3+IL-17A+ double positive ($T_{reg}17$) cells in tongue and oral draining lymph nodes. SCFA enabled the restoration of Th17 cells and Treg cells and oral infection clearance, but did not reverse weight loss. Because SCFA treatment did not fully reverse the gut inflammation, it is evident that resident microbiota have SCFA independent homeostatic mechanisms in gut mucosa. We also found that SCFA potently induce Foxp3 and IL-17A expression in CD4+ T cells depending on the cytokine milieu *in vitro*. Taken together, our data reveal that SCFA derived from resident bacteria play a critical role in controlling gut immunopathology by regulating T cell cytokines during oral mucosal infections.

Conflicts of Interest: The authors declare no conflict of interest.

Dextran-sulfate plasma adsorption lipoprotein apheresis in drug resistant primary focal segmental glomerulosclerosis patients: Results from a prospective, multicenter, single-arm intervention study

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There are no conflicts of interests to be declared by any author.

Background: Focal segmental glomerulosclerosis (FSGS) causes end stage renal disease (ESRD) in significant proportion of patients worldwide. Primary FSGS carries poor prognosis and management of FSGS patients, refractory to standard treatments or resistant to steroids, remains a major challenge. Lipoprotein apheresis is a therapeutic approach for drug resistant primary FSGS and post-renal transplant primary FSGS recurrence.
Objectives: To examine the safety and probable benefit of apheresis treatment using Liposorber® LA-15 system in patients with nephrotic syndrome (NS) in post renal transplant children.
Material and methods: Prospective, multicenter, single-arm intervention study using Liposorber® LA-15 system. Patients ≤21 years old with drug resistant or drug intolerant NS secondary to primary FSGS with glomerular filtration rate (GFR) ≥60 ml/min/1.73m^2 or post renal transplant patients ≤21 years old with primary FSGS associated NS were included in the study. Each patient had 12 dextran-sulfate plasma adsorption lipoprotein apheresis sessions for 9 weeks. Patients were followed up at 1, 3, 6, 12 and 24-months.
Results: Of 17 patients enrolled, six were excluded from the outcome analysis (protocol deviations). Three patients were lost to follow-up immediately after completion of apheresis. At 1-month follow-up, 1 of 7 patients (14.3%) attained partial remission of NS while 2 of 4 subjects (50%) and 2 of 3 subjects (66.7%) had partial/complete remission at 3- and 6-months follow-up, respectively. One of two patients followed up for 12 months had complete remission and one patient had partial remission of NS after 24 months. Improved or stable eGFR was noted in all patients over the follow-up period.
Conclusion: Our study showed improvement in response rates to steroid or immunosuppressive therapy and induced complete or partial remission of proteinuria in some of the patients with drug resistant primary FSGS. The main limitation of our study was the small number of subjects and high dropout rate.

Title: Outcomes after decompressive craniectomy in pediatric patients

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Intro/Background: Decompressive craniectomies are procedures frequently performed in the pediatric population for accidental trauma, non-accidental trauma, brain abscesses, strokes, and other deadly causes of intracranial hypertension. The objective of this study is to determine if there is any difference in morbidity or mortality between the various indications for decompressive craniectomy in pediatric patients, as well as describe our sub-population of TBI patients with a larger sample size than previously explored.
Hypothesis: Our hypothesis is that patients who undergo the operation for accidental trauma and infection will have better outcomes than those whose etiologies had a stroke component: non-accidental trauma, strokes, and ruptured vascular malformations.
Methods: This was a retrospective records review, utilizing a convenience sample from Akron Childrens Hospital. The following variables were collected and analyzed: patient demographics, indication for craniectomy, pre/post-operative Glasgow Coma Scale(GCS) and intracranial pressure(ICP), pre-op pupil exam, injury severity score, CT findings, mortality rate/cause of death and Glasgow Outcome Score (GOS) at last follow-up exam.
Results: This study included 135 patients of which 52 underwent a craniectomy, with the remainder undergoing a craniotomy. Patients who had a stroke component were 4.23 times more likely to die following the craniectomy (p=0.036) and were 21 times more likely to have unfavorable Glascow Outcome Scores (GOS) after the surgery (p<0.0001). The median GOS was 3, indicating severe disability, for stroke-like patients at their most recent follow-up and a 5, low disability, for non-stroke-like patients.
Conclusion: This study found that patients who presented with a stroke-like component were more likely to have unfavorable GOS or die after the surgery. The secondary complications from a stroke leave these patients vulnerable to poorer outcomes following surgery. Future studies should investigate how early interventions in these patients can improve outcomes, decrease mortality and impact discussions with families regarding prognosis.

Tolvaptan Use in Young Adults with Rapidly Progressing Autosomal Dominant Polycystic Kidney Disease

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There are no conflicts of interests to be declared by any author.

Background: Autosomal polycystic kidney disease (ADPKD) is a common and inherited kidney disease characterized by the formation and progression of fluid-filled cysts. Regulatory approval of tolvaptan as a treatment for ADPKD in adults with evidence of rapidly progressing disease has changed the management of this condition. The phase 3 Tolvaptan Efficacy and Safety in Management of Autosomal Dominant Polycystic Kidney Disease and Its Outcomes (TEMPO 3:4; NCT00428948) clinical trial evaluated tolvaptan in a large population (N=1,445) of subjects aged 18–50 years over a 3-year period. However, it did not specifically assess the use of tolvaptan in adolescents and young adults (AYAs) with ADPKD.

Methods: A post hoc analysis of the TEMPO 3:4 trials was performed for patients 18-24 years old. The inclusion criteria were a diagnosis of ADPKD by Ravine criteria, and estimated creatinine clearance ≥60 mL/min (by Cockcroft-Gault) or rapidly progressive kidney growth (total volume ≥750 mL) by MRI at randomization. The primary outcome was the annual rate of change in total kidney volume (TKV).

Results: A total of 51 patients in the 18-24 group were analyzed. Out of the 51 patients, 29 were subjected to tolvaptan treatment while 22 were given placebo. The tolvaptan group had a lower mean % TKV growth per year compared to the placebo group (3.9% vs. 6.5%, p=0.0491).

Conclusion: Tolvaptan, with appropriate patient selection and management, can provide effective and acceptably safe treatment in AYAs with ADPKD.

Could Pre-discharge BNP Predict 30 Day Readmission Rate?

March 2018 – March 2019

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Objectives:
Examine the correlation between BNP prior to discharge and 30-day readmission rates for patients with congestive heart failure

ABSTRACT

Background

BNP is a hormone secreted by cardiac muscle cells of the ventricles in response to stretching caused by ventricular blood volume. It is currently been utilized in diagnosis of acute exacerbation of heart failure as well as for prognostic value post myocardial infarction. BNP levels change during heart failure exacerbation as well as after therapy (diuresis). Could pre-discharge BNP correlate with risk of 30-day readmission?

Method

We conducted a prospective observational study on patients admitted with acute decompensated heart failure who received standard treatment based on current guideline for management of CHF exacerbation. BNP was obtained at the time of admission as well as on the day of or prior to the day of discharge. Clinisync was used to follow up patient's readmission within 30 days to our facility or any other facility within Ohio.

Results

Of 108 enrolled patients, 94 were included for analysis. 58 (54%) patients were evaluated with a pre-discharge BNP and 50 (46%) did not have pre-discharge BNP. Of the 58 patients who had pre-discharge BNP done, 18 patients were readmitted within 30 days and 40 patients were not readmitted within 30 days. The average admission BNP of the 30-day readmission group was 1375.92 vs 1050.81 for those not readmitted. The average discharge BNP of the readmitted patients was 1005.95 vs 623.28 for those not readmitted. The percentage BNP changes (admission to pre-discharge) in both groups were found to be statistically insignificant (p-value=0.418).

Conclusion

Pre-discharge BNP did not objectively predict 30-day readmission rate in patients with acute decompensated heart failure. Though there was no statistical significance in the percentage change in BNP in 30 day readmitted group vs non admitted group, the mean pre-discharge BNP was found to be higher in patients readmitted within 30 days.

Keywords: CHF, BNP, Re-Admission, Pre-discharge

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A case of lymphocytic pleural effusion while taking Dasatinib for CML

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Objective: To describe a case of TKI induced pleural effusion and spread awareness of this side effect for medication used to treat CLL

Abstract

Introduction
The second-generation tyrosine kinase inhibitor (TKI), dasatinib, is approved as initial treatment for chronic myeloid leukemia (CML) chronic phase (CP). Studies have shown that the incidence of dasatinib associated pleural effusion is approximately 20%. Dasatinib-associated pleural effusions are generally lymphocyte-predominant exudates which can also be seen in tuberculosis, malignancy, sarcoidosis and autoimmune disorders like SLE and Rheumatoid arthritis. Lymphocytic pleural effusion in a setting of dasatinib does not warrant an extensive work up.

Case Report
A 47 year-old lady with a 26 month history of CML-CP presented due to a one week history of sudden progressive dyspnea without cough. She started Dasatinib 100 mg PO daily with hydroxyurea at the time of her diagnosis with good response. Her medical history is otherwise unremarkable. Three months prior, the patient underwent bone biopsy demonstrating remission of CML and low white blood cell count. Examination was remarkable for bilateral lower lung rales. Chest x-ray revealed bilateral pleural effusions, confirmed by CT. Echocardiogram showed normal systolic function with an ejection fraction of 60-65%. Thoracentesis was performed and drained 1100 mL of clotted cloudy tan fluid from the right lung. The following day left sided thoracentesis drained 1050 mL. Results of the pleural fluid showed no evidence of malignancy and numerous lymphocytes. Dasatinib was held and the patient was discharged to follow up with her oncologist. At the follow up visit, she was switched to Bosutinib 400 mg PO daily.

Discussion
Dasatinib-induced lymphocyte predominant pleural effusion is relatively uncommon but a knowledge of this side effect could help us to stop at some time after negative basic investigations. Grade 3-4 pleural effusions are associated with increased dosages, severity of disease, and chronic phase. This adverse effect is not fully understood at this time. Several mechanisms are hypothesized to explain drug-induced effusions. Proposed explanations include hypersensitivity reaction, elevated free radical production, direct toxic effects, antitoxin defense suppression, inhibition of kinases and platelet-derived growth factor receptor-β, and inflammation from chemical injury. Generally, symptomatic patients are conservatively managed with holding of the medication. Physicians should be aware of this side effect of Dasatinib and translate this knowledge into reducing unnecessary testing for other causes of pleural effusion in such patients. It is reasonable to switch to a different kinase inhibitor with scheduled follow up for resolution of the pleural effusion.

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Impaired saccade adaptation: Result of distortion in cerebellar output

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No conflicts of interest to be declared

Objective: To investigate the role of the cerebellum in pathophysiology of motor learning in Cervical Dystonia.
Background: Three million people worldwide suffer from dystonia and there are only a few effective treatments for dystonia because of poorly understood pathogenesis. Traditional hypothesis for Cervical Dystonia (CD) has focused on the basal ganglia, while CD has been found in patients with cerebellar lesions. We hypothesized that patients with ataxia predominant form of CD would lack the ability to adaptively modulate their saccade amplitude in motor adaptation tasks although their eye movements were clinically normal.
Methods: The study comprised of 12 patients with ataxia predominant CD and 3 healthy controls. The experiments were performed when the subjects were experiencing maximal therapeutic benefit with botulinum toxin and tremor pharmacotherapy. The horizontal and vertical eye positions were recorded with high-resolution video oculography technique at 500 Hz with an angular resolution of 0.1°. The eye positions were calibrated in vivo, prior to initiation of the experiment. We performed two experiments: a) open-loop trials to set the baseline i.e to assess changes in saccade gain as an index of level of saccade adaptation, b) motor adaptation trials which consisted of right and left double-step saccade adaptation experiments. These two experiments allowed us to analyze motor learning over slow and fast time scales, which was done by i) evaluating kinematic parameters of primary saccades - amplitude, peak velocity, acceleration and deceleration, ii) timing parameters - latency, duration, time to peak- velocity, acceleration, and deceleration.
Results: The results showed that in all 12 patients there was impaired saccadic adaptation over both time scales, no retention over slow time scales and minimal learning over the fast time scales.
Conclusion: These results seem to suggest that distorted cerebellar output is a pathophysiologic mechanism behind CD and not the lack of cerebellar activity as previously thought.

Category – Clinical Case Vignette

Title - "A rare cause of Lower extremity DVT - May Thurner Syndrome"

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Abstract

May-Thurner syndrome (MTS), also known as iliac compression syndrome, is a rare syndrome characterized by stenosis of veins in the left leg, usually presenting between the second and fourth decades of life. We present the case of a 50 year old male , who presented with left lower extremity swelling and redness and was diagnosed with this condition. Revascularization is the definitive treatment in symptomatic MTS .Our patient underwent pharmacomechanical thrombectomy , balloon angioplasty of the L common iliac vein with stenting and remains on long term anticoagulation. We wish to highlight the common presentation, diagnosis, treatment modalities and complications that may arise if untreated from this case.

Objectives

- May–Thurner syndrome (MTS) should be suspected especially in younger patients in whom no cause for DVT has been found.
- It is always important to rule out other causes of hypercoagulability before diagnosing May Thurners syndrome
- Major complications of MTS include chronic leg swelling, stasis ulcers, including life-threatening conditions such as pulmonary embolism and post-thrombotic syndrome.
- Endovascular intervention with thrombolysis and stenting is considered the first line treatment for MTS

Conflict of interest

Dr Ceena Jacob – none

Dr Rakesh Bhalla – none

Effect of Educational Pamphlet on Advance Directive Completion Rates

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Abstract: Advance directives (AD) are documents that provide a statement of a person's wishes about medical treatment including a living will and power of attorney. This document provides caregivers with a clear set of instructions on the medical preference of patients in case they are unable to speak and decide for themselves. Normally, surgical patients are asked if they would like to complete an AD at the Pre-Anesthesia Consultation Clinic (PACC). However, many patients decline the offer and decide not to complete an AD. Thus, there is overall a low percentage of patients who have AD document completed. This study analyzes the AD completion rates of two different CCF PACC units over past several months. In this study, an educational pamphlet was designed and created to be presented to patients to inform them about the benefits of having an AD on file. Patients were presented with the pamphlet in waiting areas and in their exam rooms prior to being asked if they would like to fill out an AD. This was done to increase the AD completion rates at the two PACC units. The educational pamphlets will continue to be presented to patients at PACC units in an effort to increase AD completion rates.

AIPNO 2019

Epigenetic Modifications Involving RECK to Inhibit Prostate Cancer Metastasis

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Prostate cancer is the second leading cause of death in the United States males with estimated 174,650 cases to be diagnosed and 31,620 deaths alone in 2019. Treatments of prostate cancer such as radiation therapy and chemotherapy are often physically, mentally, and financially taxing on the patient. Emerging research has shown that the imbalance of matrix metalloproteinases (MMPs) is responsible for the uncontrolled growth of prostate cancer. During prostate cancer growth, the reversion-inducing cysteine-rich protein with kazal motifs (RECK) gene is under expressed through epigenetic modifications which allows the unrestricted expression of MMPs. RECK is critical to preventing cancer growth as it is a tumor suppressor and inhibits metastasis and angiogenesis. Green Tea polyphenols (GTP) has recently gained attention for its anticancer properties. GTP and its major constituent, EGCG can reverse epigenetic changes. Thus, we hypothesize that GTP can reduce prostate cancer growth through the reactivation of RECK. Initial experiments demonstrate that human prostate cells viz. RWPE, C42B, and RC77T expressed high levels of RECK whereas it was under-expressed in LNCaP, 22Rv1, DU145, PC-3, PC-3M, and DuPro cells. We selected DuPro and LNCaP cancer cells for further analysis and were treated with 3-Deazaneplanocin A (DZNep), Trichostatin A (TSA), a combination of DZNep, TSA, GTP and EGCG. A 72-h treatment time of GTP and EGCG showed a significant decrease in the growth of DuPro cells as compared to the control. GTP and EGCG had a similar effect on cell growth as TSA, a histone deacetylase inhibitor and DZNep, an EZH2 inhibitor. The effects of GTP and EGCG on RECK in DuPro and LNCaP cells were also tested at 24 and 48 h intervals. Although DuPro cells does not exhibit much change after 24 h, both cell lines demonstrated an increase in RECK expression after 48 h. Our studies display an increase in RECK expression and a decrease in cell growth after treatment with GTP and EGCG. In conclusion, GTP and EGCG led to reversal of the expression of RECK, and this effect was superior to DZNep and TSA having significant effect on its reactivation. Further mechanistic studies with green tea are warranted.

Sanjay Jinka

Impaired cognitive function and Alzheimer's Disease related pathology associate with reduced O-GlcNAc transferase expression in a mouse model of metabolic syndrome

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Objective: To examine the link between cognitive performance, AD-related pathology and O-GlcNAc signaling in MetS KKAy mice

Risks of Alzheimer's disease (AD) is increased >1.5 times in metabolic syndrome (MetS) patients. Hyperphosphorylated tau (pTau), is an important hallmark of AD pathology. Recent studies in AD patients and AD mouse models suggest a putative link between tau pathology and cerebral glucose hypometabolism, characterized by reduced O-linked N-acetylglucosamine protein levels. However, the role of O-GlcNAc signaling in etiology of AD in MetS is poorly understood. The goal of the present study was to investigate the link between AD-related pathology and cognitive function and O-GlcNAc transferase (OGT), a key regulator of O-GlcNAc signaling, in a mouse model of MetS ($KKAy^{+/-}$). Obese diabetic ($KKAy^{+/-}$), lean prediabetic ($KKAy^{-/-}$), and normal C57BL/6 control mice weaned at 4 weeks of age underwent periodic body weight testing, random blood glucose monitoring, and behavior testing at 12+ months of age followed by plasma and brain tissue (frontal cortex and hippocampus) harvest. Obese diabetic $KKAy^{+/-}$ mice exhibited significant impairments in novel object recognition and spontaneous activity vs. $KKAy^{-/-}$ and C57BL/6J mice, indicative of cognitive deficits. Immunoblotting of brain tissue lysates revealed increased ptau expression coupled with reduced pGSK3β and pERK expression in MetS $KKAy^{+/-}$ compared to non-MetS $KKAY^{-/-}$ mice. Notably, enhanced ptau level was accompanied with attenuated OGT expression in brain tissue lysates of MetS $KKAy^{+/-}$ mice vs. non-MetS $KKAy^{-/-}$. Together, these data demonstrate a direct link between cognitive dysfunction, hyperphosphorylated tau and OGT expression in MetS mice. Overall, our study suggests a novel role of OGT in AD etiology associated with MetS.

ANATOMICAL CORRELATION BETWEEN MITRAL AND TRICUSPID VALVE DIMENSIONS

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Objectives

This project has several objectives: (1) to learn about heart anatomy and function; (2) to find a potential correlation between the mitral valve and the tricuspid valve in sheep hearts; (3) to make a prediction model between those found correlations; (4) to then potentially prevent patient prosthesis mismatch and to economically benefit both patients and cardiovascular departments.

Abstract

The four main components of the mitral valve (MV) and tricuspid valve (TV) - annulus, leaflets, chords, and papillary muscles (PMs) – work together to ensure proper heart pumping and to prevent blood back-flow into the left atrium (MV) and right atrium (TV). It was sought to determine anatomical correlation between the dimensions of these components. Twenty-five sheep hearts were dissected. Circumference of the annulus, length and breadth of the leaflets, and number of chords from the PM to the leaflets was measured. Using Excel and JMP software, all correlations were analyzed via a scatter plot with a regression line. If the correlation coefficient was high and the p-value was below .05, a residual plot was created to see if a linear model was appropriate. The results showed that annular lengths correlated (r=.87;p= 0.007) while other components did not. Medically, prediction of annular lengths will give doctors a better estimate to what the replacement ring size should be during surgery, helping prevent patient prosthesis mismatch. Potential future annular rupturing can be predicted if the other valve has unproportionate annular circumference. Economically, department costs will decrease as fewer rings will have to be opened and not used due to them not fitting.

Conflict of Interests

There are no conflicts of interests in this project.

Randol Kennedy

Incidental Complicated Atrial Septal Defect in an Elderly Patient – A mimicry of Congestive Heart Failure

Abstract

Introduction

The sequelae of left to right shunt leading to pulmonary hypertension is a chronic, age related process. Therefore a complicated ASD can be incidentally discovered in older patients, as they can be easily mistaken for a more common cause of dyspnea, such as congestive cardiac failure or myocardial infarction.

Case Description

We present a 64 year old female with chronic obstructive pulmonary disease, hypertension, depression and peripheral arterial disease who presented with 'a few days' of palpitations, associated with exertional dyspnea, orthopnea and paroxysmal nocturnal dyspnea. Social history is significant for a 22 pack year tobacco smoking history.

Her vitals in the emergency department were as follows: blood pressure 175/116 mmHg, pulse 122, temperature 36.5C, respiratory rate 20 with oxygen saturation 95% on room air. Cardiovascular exam revealed no jugular venous distension, regular pulse rate and normal heart sounds without murmurs or gallops. There was no lung crepitations or pedal edema.

Initial investigations revealed a troponin of 1.420 ng/mL with an electrocardiogram (EKG) showing atrial tachycardia, incomplete right bundle branch block and right ventricular hypertrophy with right axis deviation. Brain natriuretic peptide (BNP) was 947.5 pg/mL. A portable chest X-ray showed cardiomegaly with significant right atrial enlargement. The patient was initially assessed as having acute congestive heart failure, possibly as a result of non ST elevated myocardial infarction (NSTEMI) and was transferred to the ICU with plans for urgent catheterization and echocardiogram.

A transthoracic echocardiogram (TTE) revealed a large atrial septal defect (ASD) with bidirectional shunting, severe pulmonary hypertension and a severely dilated right atrium and ventricle. These were further investigated and confirmed with a transesophageal echocardiogram (TEE).

Therefore, the patient's presentation was deemed secondary to ASD complicated by severe pulmonary hypertension. She was then transferred to a tertiary institution where she was considered for ASD closure. A cardiac magnetic resonance imaging/ angiogram (MRI/MRA) was performed which showed the ASD secundum - measuring 23x27 mm. The pulmonary flow/ systemic flow (Qp/Qs) was measured to be 4.0. Right heart catheterization and closure of the ASD was performed, with improvement of chamber pressures seen post closure.

Discussion

ASD is the second most common congenital heart defects in adults. Exertional dyspnea and fatigue are the most common initial presenting symptoms, which can suggest significant shunting. These symptoms, having an insidious onset, may not be evident until late adult life, with some patients being 60 years and over. As these symptoms overlap with a variety of more common diagnoses such as congestive heart failure and myocardial infarction, patients with a first time presentation of symptomatic ASD can therefore be a diagnostic dilemma, such as with our patient.

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Natasha Kesav

ABSTRACT TITLE: Novel automated processing technique for standardization and normalization of fluorescein angiography images in patients with uveitis

ABSTRACT BODY: Purpose: Fluorescein angiography (FA) is an important diagnostic modality in ocular inflammation and uveitis used to characterize pathology in the retinal vasculature. However, the use of FA is currently limited due to lack of objective quantitative assessment. This study demonstrates the potential of a novel quantitative assessment of FA images using automated processing techniques.

Methods: Patients enrolled in the Uveitis/Intraocular Inflammatory Disease Biobank (iBank) protocol at the National Eye Institute underwent widefield FA using the Optos 200Tx (Optos plc, Dunfermline, United Kingdom). Images were then retrospectively downloaded, removed of patient identifying information, and exported to MATLAB analysis software. The images were subsequently processed using a modified Laplacian of Gaussian (LoG) filter to the extract branch pattern and orientation information, followed by local image intensity normalization and calculation.

Results: Using the methodology described, standardized computer algorithms were successfully developed for a set of digitized fluorescein angiograms. Figure 1 shows a sample image from a patient with uveitis and diffuse vascular leakage. Figure 2 shows the same image after local normalization with the extracted branch pattern overlaid.

Conclusions: Our method of branch pattern extraction provides a way to standardize and extract the vasculature using FA images with a goal of quantifying changes in vascular leakage. This technique can potentially be used to provide a reliable alternative to the current subjective clinician-dependent measurement of vascular leakage or ischemia in uveitis and other diseases with retinal vascular pathology. Additionally, this novel approach can be used to further to investigate whether there are unique phenotypes of branch patterns between healthy controls and patients with uveitis.

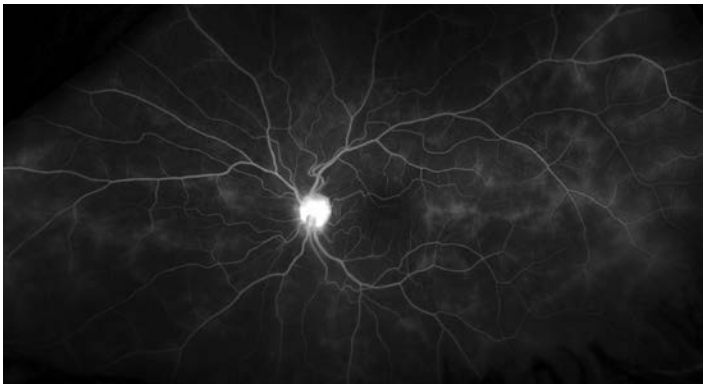

Figure 1: Shows original cropped FA image in a patient with uveitis and vascular leakage

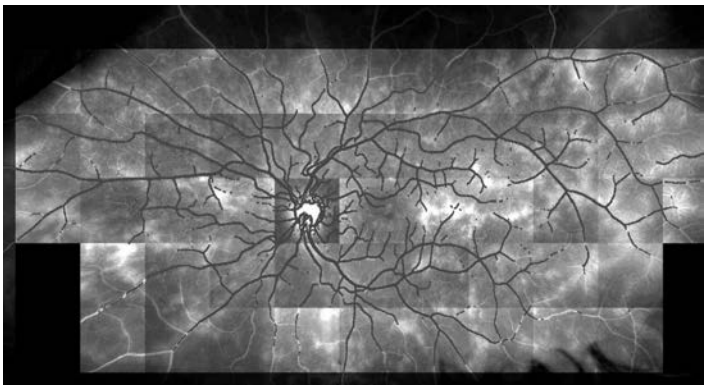

Figure 2 shows the local normalized image with branch pattern overlaid.

Title: Impact of Auditory Experience on Speech Recognition in Adult Cochlear Implant Users

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Abstract: Different types of auditory experiences, such as musical training and multilingual exposure, have been shown to contribute to significant advantages in speech perception for normal-hearing individuals and can impact several domains of hearing and physiological processes. Individuals with previous exposure to complex sounds, voices, and instruments via musical training tend to process dynamic auditory features better, demonstrated by the observed 'musician effect' in many auditory tasks. Similarly, early exposure to multiple languages has been associated with structural brain changes, and individuals demonstrate enhanced performance on speech perception tasks. Cochlear implants (CIs) are prosthetic devices that restore some sense of hearing to profoundly deaf individuals. CIs are particularly beneficial in quiet listening environments, but CI users are disadvantaged by degraded auditory input in adverse conditions. Further, individual CI users differ greatly in their speech understanding abilities. However, the impact of prior auditory experience on CI users is still unknown. In the current study, we present a comprehensive review of how music and language experience affect speech perception in adults, and the relationship between auditory experience and enhanced speech perception in adverse listening conditions. We further discuss how these auditory experiences may help listeners compensate for hearing loss or a CI. Then, we explored the music and language exposure of experienced CI users with good speech perception outcomes, and the potential contributions of their prior auditory experience to observed variability in outcomes. An analysis of language background survey data was done to determine the relationship between musical and language experience and speech perception performance in individuals with CIs. Findings from the current study will be a first step towards understanding the relationship between prior auditory experience and CI users, and can give insight to potential treatments, predictive technologies or diagnosis for those with hearing issues.

Comparing the Effects of Apigenin against a Derivative Apigenin Compound On Metastatic Prostate Cancer Cell Line

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Prostate cancer is the second most common cancer and the second leading cause of cancer-related deaths in the United States men due to its metastatic progression as cancer cells start to spread to other organs eventually leading to organ failure. The standard of care for advance-stage cancer remains specifically on high intensity focused radiotherapy and chemotherapy involving new investigational agents. Our lab has conducted extensive research on apigenin (4',5,7-trihydroxyflavone), a phytochemical, that has shown to possess anticancer properties. Apigenin has a short life span in systemic circulation and is unavailable to the target tissue due to its fast degradation. We envision developing a derivative to make apigenin more efficient as a prodrug attaching a phosphate group through a linker easily cleaved by alkaline phosphatase (ALP). ALP is an enzyme more commonly known for its non-specific bone turnover marker for evaluation during chemotherapy having ability to predict the survivability of men with advanced prostate cancer. Human prostate cancer metastatic cell lines DU145, PC-3M and its parental counterpart, PC-3 were exposed to apigenin-ALP (AA-ALP) and was compared it to the parental compound, apigenin. Firstly, we measure the constitutive levels of ALP in these cells. PC-3M and PC-3 cells displayed higher concentrations of ALP compared to the DU-145 and the transformed prostate epithelial RWPE cells which had no/minimal ALP activity. Furthermore, AA-ALP was more effective than apigenin in inhibiting cell proliferation and migration; and this effect was higher in PC-3M and PC-3 cells than DU145 cells. The data provide evidence that AA-ALP is more efficacious than apigenin in inhibiting proliferation and metastatic progression in cancer cells possessing high levels of ALP. Further detail studies are warranted.

Incidence, Associated Factors and Outcomes of Posterior reversible encephalopathy syndrome (PRES) in Pediatric Hospitalizations.

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Background: PRES is a recently recognized distinct clinic-radiological disease over the recent decades, characterized by potentially reversible vasogenic edema of brain with preferential involvement of the posterior cortex. Clinical signs include cephalalgia, visual disturbances, alteration in mental status, focal neurological deficits and seizures. PRES has been reported in children, but most data are from single center retrospective studies and focused on a specific subset of patients such as hypertension, renal insufficiency, sickle cell disease, organ transplantation etc. However, the incidence in the general pediatric population is not known.

Objective: To analyze the incidence and associated contributing factors of PRES among inpatient pediatric hospitalizations.

Design/Methods:
We analyzed the data from Agency for Healthcare Research and Quality (AHRQ) sponsored 2016 Kids' Inpatient Database (KID). The KID 2016 was created from a stratified, random sample of discharges from all community, non-rehabilitation hospitals which amounts to 88% of the total hospitals in US. Kid databases are released almost every 3 years and for this study we analyzed 2016 KID database for PRES related hospitalization as it employed ICD 10 CM for coding purpose and has a specific code for PRES (No available in ICD9 CM codes). Based on literature review, we identified 10 factors/diagnosis associated with PRES and then queried the database for the presence or absence of these variables in patients with PRES. Common childhood cancers including leukemia/lymphomas, hepatoblastoma, neuroblastoma, primary CNS tumors and osteosarcoma were included for analysis. Our study received institutional review board approval from the Metro Health Medical Center and was deemed exempt from participation consent.

Results: A total of 825 pediatric hospitalizations were observed during the study period. Table. 1 describes the baseline demographics of the study population. Adolescents and females are more prone to develop PRES. As described in literature, we identified a significant association between PRES and hypertension as well as renal disorders (Table. 2). Using conditional multivariable logistic regression, adjusted odds ratios and CI were determined for all associated comorbid conditions (Table. 3).

Conclusion(s): This is the first study to evaluate various comorbid conditions/risk factors in a large cohort of pediatric patients. Females, adolescents, hypertension, renal disorders are associated with PRES. Knowledge about these risk factors is essential for identifying the at-risk population and paves way for more research to understand this complex condition.

Table 1: Demographic data of the study population.

Variables	0-5 years	6-12 years	13-20 years	Total	Controls	P value
Population (weighted estimates)	106	289	430	825	2295395	<0.001
Gender Male	46	116	136	298	998789	<0.001
Female	60	173	294	527	1296033	
Race						
White	40	100	146	286	1037228	<0.001
Black	15	50	126	191	404084	
Hispanic	25	85	84	194	485104	
Others	IS	25	36	69	190333	
Missing	17	29	37	83	178645	
Insurance						
Public	54	146	234	434	1265222	0.3
Private	43	118	162	323	861048	
Uninsured	IS	26	34	69	169125	
Median Household Income						
$1-24,999	28	93	149	270	763739	0.8
$25,000-34,999	20	70	103	193	563286	
$35,000-44,999	31	65	99	195	517774	
45,000 or more	22	52	74	148	416705	
Admission						
Non elective	86	232	366	684	1780350	<0.001
Elective	20	58	62	140	507094	
Location of hospital						
Northeast	19	56	76	151	398382	0.6
Midwest	29	78	99	206	502517	
South	28	94	168	290	898475	
West	29	62	87	178	496020	

Table 2: Univariate analysis of conditions associated with PRES

S. NO	Factors	PRES	Control	Odds Ratio	Lower CI	Upper CI	p Value
1	Solid Organ Tx Status	29	10961	7.59	5.23	11.004	<0.001
2	Bone Marrow Transplant	39	6709	16.927	12.26	23.36	<0.001
3	Hypertension	270	47945	22.8	19.71	26.38	<0.001
4	Renal Disorder	400	88338	23.51	20.51	26.96	<0.001
5	Immunodeficiency, Primary	28	6707	11.9	8.21	17.488	<0.001
6	Malignancies	15	15389	2.747	1.648	4.57	<0.001
7	Sepsis	48	36901	3.78	2.82	5.06	<0.001
8	Systemic Connective Tissue Disorder	66	11229	17.68	13.74	22.76	<0.001
9	Blood Transfusion	85	45998	5.617	4.45	7.032	<0.001
10	Hypomagnesemia	73	18148	12.181	9.57	15.5	<0.001
11	Severe Sepsis/MODS	48	15061	9.35	6.98	12.52	<0.001
12	Sickle cell anemia	50	40848	3.56	2.67	4.74	<0.001

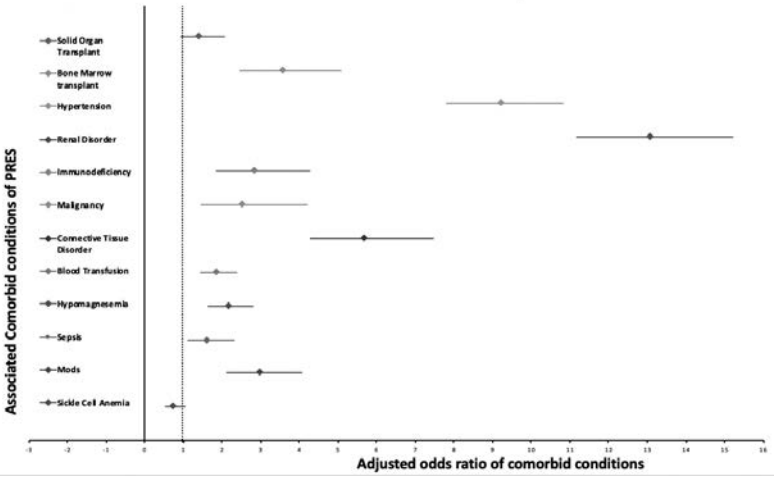
Table 3 shows the adjusted odds ratio (aOR) and confidence intervals of factors associated with PRES.

Variables	aOR	Lower Confidence Interval	Upper Confidence Interval	P value
Age (in years)	1.022	1.011	1.033	<0.001
Male	0.655	0.566	0.758	<0.001
Race				0.002
Black VS white	1.231	0.891	1.701	0.207
Hispanic VS white	0.825	0.633	1.077	0.157
Other VS white	1.012	0.761	1.345	0.934
Solid Transplantation	1.4	0.956	2.052	0.084
Bone Marrow Transplant	3.568	2.505	5.082	<0.001
Hypertension	9.204	7.836	10.811	<0.001
Renal Disorder	13.054	11.204	15.209	<0.001
Immunodeficiency	2.827	1.872	4.269	<0.001
Malignancy	2.511	1.502	4.197	<0.001
Systemic Connective Disorder	5.676	4.318	7.46	<0.001
Blood Transfusion	1.864	1.462	2.377	<0.001
Hypomagnesemia	2.154	1.656	2.803	<0.001
Anemia	1.087	0.851	1.389	0.506
Severe Sepsis	1.619	1.138	2.305	0.007
Sickle Cell Anemia	2.957	2.151	4.065	<0.001
Sepsis	0.74	0.522	1.048	0.089

Table 4: Outcomes (LOS, in hospital death, disability, costs) in PRES in comparison with all inpatient discharges

S. NO	Parameters	PRES	Controls	p Value
1	LOS Mean +/- SE	18.28+/-1	4.2+/-0.05	<0.001
2	Charge	309273+/-23276	42635+/-86.5	<0.001
3	Severity			
	No Loss of function	0	1491	<0.001
	Minor	Censored	971166	
	Moderate	37	8900672	
	Major	370	338709	
	Extreme	416	93356	
4	Disposition			
	Home	679	2129900	<0.001
	Home with Home health	71	58919	
	Transfer out	44	84074	
5	Mortality	26/825 (3.2%)	8341/2293556 (0.4%)	<0.001

Risk of various factors associated with PRES in hospitalized children



50 years Without Complications After Ileocolonic Transposition

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Objectives: Introduce physicians and caregivers to patients living with previous ileocolonic transposition and the complications associated with the procedure

Abstract

Background

Ileocolonic transposition with esophagectomy is performed after caustic injury of the esophagus. Mortality is less than 5%. Postoperative frequent complications include cervical anastomotic leakage, graft necrosis, and anastomotic strictures early in the course and late complications like anastomotic strictures and graft redundancy.

Case

A 65 year old gentleman was seen in the emergency department for nausea and vomiting for one day with history of heroin and cocaine abuse. Withdrawal symptoms from opiates were a suspected cause of this patient's symptoms, but upon imaging a chest x-ray showed herniation of what appeared to be abdominal contents into the mediastinum.

Upon further questioning of the patient once improved, he revealed esophagectomy performed at age 16 due to ingestion of caustic agent. He has been living with an ileocolonic transposition for the past 49 years without significant complications.

Esophagram was performed and showed significant delay in transit of barium from the pharynx to the stomach, mostly relating to pooling of contrast within large haustra throughout the intrathoracic colon without high-grade strictures and absence of peristalsis.

Discussion

Complications are frequent in these patients. In this case report we present a gentleman who has been free of complications for almost 50 years. Common complications that patients with this procedure are expected however quality of life for most patients is acceptable.

Key Points:
Identify ileocolonic transposition on imaging
Know the complications associated with ileocolonic transposition
Importance of taking a detailed surgical and past medical history

Title: Acute kidney injury in children and adolescents admitted for acute renal colic due to kidney stones

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Objectives: To identify the prevalence of acute kidney injury in a pediatric population admitted for renal colic.

Abstract:

Background: Kidney stones are increasing in children [1,2]. Acute kidney injury (AKI) refers to a rapid decline in kidney function and stones are an uncommon cause of AKI in adults but may be more common in children[3].

Methods: A retrospective chart review of patients presenting to Akron Children's Hospital from 1/2008-12/2017. Patients were identified by ICD 9 and 10 codes for nephrolithiasis and included if they had stone disease confirmed by 1) documentation of known kidney stones by a nephrologist or urologist or 2) CT or renal ultrasound positive for stones. Inpatient admissions were analyzed if specifically for kidney stones.

Results: 313 inpatient admissions were documented. 18 patients were positive for AKI (AKI+), 91 patients were negative for AKI (AKI-), and 97 patients lacked adequate data for AKI assessment. 30 AKI- individuals (26.1%) received a renal ultrasound (RUS) compared to 12 AKI+ individuals (66.7%) ($p = 0.001$). 16 AKI- individuals (13.9%) had unilateral obstruction vs. 7 AKI+ individuals (38.9%) ($p = 0.017$). 86 individuals of the AKI- group (74.8%) were prescribed NSAIDS compared to 13 AKI+ individuals (72.2%) ($p=0.778$).

Conclusion: More RUS were obtained in the AKI+ group than the AKI- group, and AKI+ patients had a significantly higher occurrence of unilateral obstruction. There was no significant difference in the rate of NSAIDs administered to patients between the AKI- and AKI+ groups. Nephrolithiasis may be a more common cause of AKI in children rather than adults which is concerning given the known association of kidney stones with chronic kidney disease in adults.

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No authors have any potential conflicts of interest.

Sarisha Mahajan[1], Bin Luo[2], and Lin Mei, MD, PhD[2]

Understanding the effects of MG132, MLN4924, Bicuculline, and AP-5 on Neuron Cell Cultures

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Background:
Neuronal cultures are used in labs to study the normal physiology of the nervous system, and to study the effects of diseases in the nervous systems and drugs used to treat those conditions. Neuronal cultures allow us to study the effects of different chemicals on the growth of the cell. The four chemicals used in this experiment are as follows: MG132 is a ubiquitin-proteasome inhibitor, belonging to the class of synthetic peptide aldehydes. It blocks the breakdown of proteins and is used to prevent cells from transitioning into anaphase. MLN4924, or Pevonedistat, is a small molecule, inhibitor of NEDD8-Activating Enzyme (NAE). Bicuculline is a light-sensitive competitive antagonist of $GABA_A$ receptors. AP-5 is a selective NMDA receptor antagonist that inhibits their ligand binding site. It is useful to isolate the action of other glutamate receptors in the brain.

Goal:
To examine the effects of various chemicals on the growth of neuron cells cultured *in vitro*.

Methods and Materials:
A pregnant mouse was euthanized and the brains of the E18.5 mice were removed. The cortices were separated from the rest of the brain, minced, and broken down into individual cells with trypsinization medium. The cells were then added to neurobasal medium and grown in vitro in a 5% CO2 and 37-degree-Celsius incubator. On DIV 5, four chemicals; 10 uM of MG132 and MLN4924; 30uM of Bicuculline, and 100uM of AP-5; were added to the medium. The cell growth was monitored for 24 hours and the pyramidal neurons were stained to examine the effects.

Results:
As MG132 and MLN4924 are the inhibitors of protein degradation, they obstructed the normal physiological functions of the neuron, creating a shorter and less complex neuron. Bicuculline inhibited GABA transmission which usually dampen the cell, making the pyramidal neurons more active and complex. Since AP-5 blocked the glutamate transmission, it was expected that the neuron would become less active, but interestingly, we did not see any differences when it was compared with the control neuron.

Conclusion:
We have found that after the treatment of MG132 and MLN4924, apoptosis occurred in the cell, decreasing the total length and intricacy of the neurons. The Bicuculline treatment resulted in longer branches and a more elaborate neuron, but the AP-5 treatment surprisingly, showed no obvious changes in the growth of the neuron.

Top-down Fabrication of Endothelialized Capillary-like 3D Channel Networks throughout Thick Hydrogels

Sanaa Mansoor (Northeast Ohio Medical University), John Rector, Dr. Leon Bellan, Vanderbilt University School of Biomedical Engineering

In the cardiovascular system, blood is pumped from the heart to arteries, then to arterioles, to capillaries, to venules, and lastly to veins. Arterioles, which are less than 60-100 μm in diameter branch into capillary networks which are 5-10 μm in diameter. Capillaries are responsible for the exchange of gases, nutrients, and wastes between tissues and blood. While many researchers have demonstrated top-down fabrication approaches to show the ability to produce channels containing a layer of endothelial cells surrounded by a basement membrane, they have yet to show the scaling of these channels past the size of an arteriole. Top-down fabrication approaches start by patterning the micro-channels within hydrogels to create vascular networks, followed by the introduction of endothelial cells to line the channel walls. It is important to note, however, that capillaries are the vessels where critical exchange of soluble compounds occurs, leveraging their single-cell thick walls and high surface area. Tissue engineers, however, have yet to demonstrate top-down fabrication of endothelialized channels less than 60 μm, a threshold far larger than the ~10 μm diameter of a capillary; thus current approaches fail to replicate natural capillary bed architecture. The significance of this work lies in replicating the capillary architecture, complete with endothelialized vasculature in large volumes of engineered tissue. Our specific aim was to produce a network of interconnected capillary-sized channels lined with endothelial cells which can be perfused to produce an in vitro model of capillary networks within thick hydrogels. Hydrogel scaffold fabrication process involved using sacrificial fibers formed by solvent-spinning Soluplus®, a thermoresponsive polymer, embedded in gelatin, to make networks of channels with architectures that mimic the capillary bed. We performed initial control experiments to show diffusion of dextran from these capillary channels into the gel. We embedded GFP-HUVECs into our capillary network channels and were able to get them to successfully line the channel walls. Green Fluorescent Protein (GFP) expressing Human Umbilical Vein Endothelial Cells (HUVEC) were introduced into the channels and imaged with confocal microscopy at several timepoints. Future experiments will include replicating these experiments with endothelialized channels to demonstrate barrier properties and viability of these endothelialized cells in the capillary channels over time. In addition, future work will involve optimizing cell growth and proliferation, and incorporate cells from the parenchymal space like fibroblasts. Recent advances in vascularized microfluidic hydrogels have led to 50-100 μm endothelialized channels, however, this technique allows for patterning of the smallest to date (5-50 μm) channels that can be lined with endothelial cells and perfused to produce an in vitro model of capillary networks within a gelatin scaffold. This work is a major stepping stone towards engineering a complete microcirculatory system.

TLR4 is Necessary for LPS Mediated Liver Inflammation in NASH

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Introduction: Non-alcoholic fatty liver disease (NAFLD), the most common liver disorder in Western countries with an estimated overall prevalence of 20-30%, is expected to increase in prevalence to 50% by 2030. NAFLD, considered a relatively benign condition, can progress to the more insidious non-alcoholic steatohepatitis (NASH). NASH has all the hallmarks of NAFLD with the added component of hepatic inflammation.
Animal studies have shown that gut flora and chronic liver disease are closely interrelated. There exists a relationship between feeding mice a diet high in saturated fat (MD) and increased liver steatosis, increased inflammation, and neutrophil infiltration consistent with NASH, compared to a control diet (CD) fed mice. LPS is increased in NASH and obesity and adding extraneous LPS results in weight and adipose gain.
Goals: In this study we take a closer look at inflammatory molecules TNF-α, IL-1β, CCL-1 and TGF-β, and anti-oxidative molecule, catalase in this TLR4KO model to better understand LPS-TLR-4 pathway in dietary fat mediated hepatic steatosis.

Methods: Samples from WT and TLR4 KO mice fed CD or MD and treated LPS, were used for Western blot and RT-PCR analysis. Graph Pad Prism was used for statistical analysis.

Results: TLR-4 KO mice fed MD exhibited reduced levels of expression of TNF-α, IL-1β, CCL-1 and TGF-β. Addition of LPS in fat fed TLR4 KO mice did not alter the levels of inflammatory cytokines. Protein levels of catalase were increases both in TLR4KO CD and MD fed mice.

Conclusion: The results show that TLR4 is a necessary intermediate in the microbiome/LPS mediated inflammatory changes and also in the modulation of anti-oxidative function of catalase during NASH progression.

Title: Doxorubicin-induced cardiomyopathy: Prevention and treatment by a coronary specific vasodilator Chromonar

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Objectives:

- To explore the possibility of using a known coronary vasodilator as a treatment for doxorubicin induced cardiomyopathy.
- To propose a way how doxorubicin can lead to heart failure

Abstract:

Doxorubicin is an anthracycline class chemotherapeutic agent that is used with other medications to treat cancers. Doxorubicin works by slowing the growth of cancer cells due to its toxic effects mediated through redox cycling that produces oxidative injury to cells. One side effect of doxorubicin treatment is doxorubicin-induced cardiomyopathy (DiC). DiC typically has the morphological and functional abnormalities of dilated cardiomyopathy, with all cardiac chambers dilated. This dilation occurs as a result of reductions in diastolic and systolic dysfunction leading to impaired ejection and reduced cardiac output. DiC can progress to congestive heart failure. Currently there is no treatment or prevention for DiC. Our goal is to test the hypothesis that Chromonar, a coronary specific vasodilator, will prevent and treat DiC. We have observed that some types of heart failure are associated with evidence of coronary insufficiency, and Chromonar has a beneficial effect for treatment heart failure with non-obstructive coronary artery disease. Accordingly, we propose that the coronary hyperemia, produced by Chromonar, will be effective in facilitating recovery of the heart from DiC. C56Bl/6J mice (N=10) were used for each group. Group 1 received doxorubicin and Chromonar same time, Group 2 received Doxorubicin for 6 weeks with Chromonar treatment to follow. Relationship between myocardial blood flow (MBF) and cardiac work in wild type WT+DOX and WT+DOX+ Chromonar for 6 weeks was observed. The MBF was significantly lower in DOX-treated mice and had a blunted response (vs WT) at any given increment of cardiac work. Ejection fraction (%EF) of the heart also decreased after DOX and Chromonar treatment. Based on these findings, the we speculate that the cause of doxorubicin induced cardiomyopathy is inadequate myocardial blood flow to the heart. Pharmacological coronary vasodilation with Chromonar to increase myocardial blood flow stops and reverses the functional decline and improves cardiac function.

Title - It can happen in men, An ulcerative male breast carcinoma
Authors – **Vivek Mendapara,** Vasant Temull, Jayantilal Bhimani
Institution – St Vincent Charity Medical Center
Objective - Illustrate the presentation and work up in a patient with male breast carcinoma And Spread awareness about breast carcinoma in male.

Abstract:
A 72 years old male with a PMH of hypertension and chronic alcoholism was presented to the ER with an ulcerated right breast mass. He noticed a painless breast mass which was small in size and increased gradually over a year and worsened 5 days prior to admission. The mass became increasingly painful and ulcerated with foul smelling bloody discharge. The patient attested to associated fatigue, decreased appetite, exertional shortness of breath which started 2-3 weeks ago and unintentional 10-pound weight loss in last few months. He was an ex-smoker who quit 27 years ago and has a long history of drinking 6 cans of beer and a pint of hard liquor every day. He denied family history of any cancers.

On physical examination his BP 167/84 mmHg, temperature 36.7, RR 18 breaths/min, pulse 85/min with Spo2 98% on RA. Examination was significant for an approximately 9x6 cm firm non-tender mass with central area of ulceration and visible bloody discharge, located lateral to right nipple, with irregular borders, not attached to underlying muscle but tethered to overlying skin. Surrounding skin was hyperpigmented. Left breast was normal. Right posterior non tender Axillary lymph node was palpable 2x1 cm.

An X-ray of the chest showed right chest wall mass. A diagnostic core needle biopsy was obtained and histopathology was positive for invasive cribriform carcinoma with multiple microcalcifications. Staging CT scan of chest, abdomen, and pelvis with contrast, suggested pulmonary emboli in the right middle and lower lobes with 6.5x3.4 cm ulcerated breast mass, 1.3 cm right axillary lymphadenopathy and hepatic steatosis. Bone scan was negative for bone metastasis. Patient was initially treated with therapeutic dose of lovenox and then switched to xarelto on discharge. Patient was reviewed by oncology and recommended initially neoadjuvant chemotherapy and then for surgery for stage 3b breast cancer and follow up as an outpatient.

Male breast cancer is a rare entity and occurs only in 0.5-1% of total breast cancers in the USA. Due to lack of awareness and unfamiliar screening guidelines for males, most cases are diagnosed at a later stage. This case spreads awareness for male breast carcinoma and proposes encouragement of men to do regular self-breast examinations and report any concern to primary care physician for a proper work-up.

Does Trisomy 12 in Chronic Lymphocytic Leukemia Present in Advanced Stage?

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Objectives: Discuss the trisomy 12 cytogenetic abnormality of CLL and its presentation

ABSTRACT

Background:

Chronic lymphocytic leukemia (CLL), a mature B cell neoplasm predominantly affects older adults, median age at diagnosis approximately 72 years. Cytogenetic abnormalities play a major role in the pathogenesis, presentation, progression and survival. Literature is limited regarding the genetic factors associated with early disease onset and advanced presentation. We present a case of advanced CLL with trisomy 12 mutation presented relatively at an early age.

Case presentation:

A 56 year old gentleman without significant past medical history presented with constant, new onset right sided throbbing headache and fatigue for one month associated with progressive dyspnea on exertion and 5 pound weight loss in 2 weeks. No fever, chills, night sweats, or bruising. Exam showed conjunctival pallor, palpable posterior cervical lymph node, and palpable splenomegaly.

Labs were significant for severe normocytic anemia (Hgb, 2.9 g/dL), thrombocytopenia (PLT, 33 K/uL), leukocytosis (WBC, 278 K//uL), and smudge cells. Brain CT was unremarkable, chest CT showed numerous axillary lymph nodes, CT abdomen/pelvis showed splenomegaly and numerous bilateral inguinal lymph nodes. Flow cytometry identified CD5+ clonal B-cell population (97%) with a B-cell CLL/small lymphocytic lymphoma (CLL/SLL) immunophenotype. FISH for CLL detected trisomy 12 in 83% of nuclei. Patient was diagnosed with Rai stage IV and Binet stage C CLL.

The patient was transfused with 5 units of leukocyte reduced red blood cells. Upon discharge, he was started on Ibrutinib. His leukocyte (278-->139) and platelet (39-->121) counts started to improve within 2 weeks of therapy.

Conclusion:

Trisomy 12 chromosomal abnormality is detectable in 15-20% cases of CLL. It was previously reported to be associated with thrombocytopenia, Richter's transformation and intermediate prognosis. In one FISH based study, trisomy 12 was found to be associated with high proliferative activity and advanced disease. This might be through functional upregulation of integrin signaling in trisomy 12 CLL cells as described in the literature. The current case strongly emphasizes the trisomy 12 correlation with advanced disease presentation and the need for further studies about this genetic aberration at the molecular level.

Prevalence of Post-operative Acute Kidney Injury (AKI) in Children Following Cardiac Surgery with Cardiopulmonary Bypass

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Objective: To observe and identify potential risk factors for the development of AKI and their incidence rate.

Abstract:
In this prospective observational study, 143 children were studied post cardiac surgery in order to observe for biomarkers of AKI. The primary endpoint for this prospective trial was to assess the incidence of acute kidney injury in pediatric patients undergoing cardiac surgery with cardiopulmonary bypass. Secondarily we wished to examine the risk factors associated with the development of AKI in pediatric post cardiac surgery patients and to assess outcomes in patients who develop AKI postoperatively, with regards to hospital stay, need for mechanical ventilation, inotropic support and in-hospital mortality. Acute kidney injury was found to develop in 25.2% of the study population. Most commonly affecting the younger children especially infants with lower preoperative weight and lengths. Intraoperatively a longer duration of surgical procedure and cardiopulmonary bypass times were associated with AKI. Post operatively, use of drugs with nephrotoxic potential, greater cumulative negative fluid balances and especially the development of sepsis and pump failure were significantly associated with AKI development. AKI was also associated with poorer outcomes with regard to longer ICU and hospital stays and need for prolonged ventilation. Thus AKI is an important factor to consider in a child undergoing cardiac surgery with cardiopulmonary bypass. Children at higher risk should be actively identified and monitored more vigorously. Appropriate and timely action for its prevention and treatment in the event of its development should be instituted for better outcomes.

Androgen Deprivation Therapy Enhances Cancer Stem Cell Population in Prostate Cancer

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Prostate cancer is the second most common cancer in the United States and the second leading cause of death in men. Androgen-Deprivation Therapy (ADT) is a current treatment modality for advanced-stage prostate cancer, but it remains controversial. More than 30% of patients who have undergone ADT show signs of cancer recurrence and/or androgen-independent disease. Some adverse effects of ADT includes hot flashes, metabolic disorders, alteration in bone mineral density, cardiovascular problems, and sexual dysfunction. Cancer stem cells (CSCs) are a small percentage of cells in a tumor that reinitiates tumor growth. SOX2 is a transcription factor which with high expression may indicate poor prognosis through increased drug resistance and metastasis. OCT4 is the core transcription factor for maintaining pluripotency and is related to tumorgenicity and malignancy. We hypothesize that ADT alters the phenotype of cancer cells to cancer stem cell-like features with higher expression of SOX2 and OCT4. We determined whether ADT results in enrichment of CSCs with higher expression of SOX2 and OCT4. SOX2 and OCT4 expression was determined in subset of patients with and without ADT by immunohistochemistry (IHC). IHC slides were assigned an immunoreactive score (IRS) using the percentage of positive cells and intensity of the color reaction. Additional experiments utilized C4-2B-ENZU cells generated by growing C4-2B cells in 5-20μM of ENZU over 60 days and maintained in 5μM ENZU in the cell culture medium and androgen-responsive human prostate cancer LNCaP cells to assess SOX2 and OCT4 levels by Western blotting. The IRS scores for SOX2 were 1.635 for non-ADT compared to 3.040 for ADT with higher staining for SOX2 and a higher percentage of positive cells. The IRS scores for OCT4 were 1.733 for non-ADT compared to 1.914 for ADT showing a modest difference in the expression of OCT4 expression. In the Western blot data, expression of OCT4 was higher in the LNCaP-ENZU treated cells and the SOX2 expression is higher in the C4-2B ENZU treated cells. This indicates that the expression of CSC markers increases in patients undergoing ADT protocol. Further studies are required to determine the involvement of CSCs in CRPC acquisition as well as the pathways and factors contributing to its expansion in response to ADT.

Management of Nephrotic Syndrome Through the Use of ACTH: A Systematic Review

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There are no conflicts of interests to be declared by any author.

Background: In recent years, the use of adrenocorticotropic hormone (ACTH) therapy for treatment of proteinuria due to nephrotic syndrome (NS) has been heavily explored. ACTH therapy, which comes in the natural (H.P. Acthar Gel) or synthetic (Tetracosactide) form, have resulted in remission in patients with immunosuppressive and steroid-resistant NS. However, the exact efficacy of ACTH therapy in the nephrotic syndrome etiologies, such as membranous nephropathy (MN), focal segmental glomerulosclerosis (FSGS), minimal change disease (MCD), lupus nephritis (LN), IgA nephropathy (IgAN) and membranoproliferative glomerulonephritis (MPGN) has not been determined.

Objective: This systematic review analyzed the published literature on ACTH therapy in various NS etiologies to determine its efficacy.

Methods: A comprehensive search of MEDLINE, EMBASE, and Cochrane databases was conducted for articles through June 2019. Prospective and retrospective studies of randomized control trials, which studied synthetic or natural ACTH treatment in patients with known etiologies of NS, were included. Studies were excluded when they consisted of a single case report or didn't analyze the lone effect of ACTH in NS.

Results: The initial search yielded a total of 348 papers and 21 papers were included. In 122 MN patients, there was an overall remission of 70% (85/122) and an overall remission of 43% (42/98) in FSGS patients. In other etiologies, there were overall remissions of 78% (11/14), 31% (5/16), 38% (8/21) and 62% (8/13) in MCD, LN, IgAN, and MPGN patients, respectively.

Conclusion: ACTH showed benefits in proteinuria reduction across all etiologies of NS. However, more randomized controlled studies with larger population sets and longer follow-ups are imperative to establish causal benefits. New studies into its efficacy in children should be also be investigated.

Case Report: The Significance of Anti-Phospholipase Receptor Antibodies in A Patient with Membranous Nephropathy

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Objective: The highlight a unique case report of membranous nephropathy that garners study and more clinical research.

Abstract

Membranous nephropathy is the major cause of nephrotic syndrome in adults and may be secondary to SLE or malignancy in 25% of patients. Without any etiology, it is called primary membranous nephropathy, which is usually associated with phospholipase A_2 (PLA_2) receptor antibodies. Secondary membranous nephropathy can appear months before a secondary cause is identified. Here we report a case of membranous nephropathy, later found to be secondary to pancreatic adenocarcinoma and was also positive for PLA_2 receptor antibodies. Given the ambiguity that is noted in this case, we strongly believe that more clinical studies will be needed in the upcoming future to clearly establish a distinction between primary and secondary membranous nephropathy in order to develop better clinical interventions.

An Update on the Pathophysiology and Treatment of Cardiorenal Syndrome

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Objective: This article serves to provide a current overview of the classifications, pathology, risk factors, diagnosis, and management of cardiorenal syndrome.

ABSTRACT

Cardiorenal syndrome encompasses various disorders of the heart and kidneys; dysfunction of one organ leads to acute or chronic dysfunction of the other. It incorporates the intersection of heart-kidney interactions across several mediums, hemodynamically, through alterations in neurohormonal markers, and increased venous and renal pressure, all of which are hallmarks of its clinical phenotypes. This article explores the epidemiology, pathology, classification, and treatment of each type of cardiorenal syndrome. The authors used MEDLINE and Cochrane Central Register of Controlled Trials to order, identify, and analyze the latest information available. Bibliography searches of primary articles were used as well. Important Medical Subject Heading descriptors used for the search included cardiorenal syndrome, kidney disease, chronic renal/chronic kidney, acute kidney injury, end-stage renal or end-stage kidney disease, renal dysfunction, heart failure, ultrafiltration, ACE inhibitor ARB MRA, beta blockers Cardiac resynchronization therapy, LVAD, diuretics, and loop diuretic. Important clinical trials are highlighted and presented to give physicians a firm knowledge of the modalities available to treat the various manifestations of Cardiorenal Syndrome.

PCRRT Expert Committee Recommendation on Prescribing Prolonged Intermittent Renal Replacement Therapy in Critically Sick Children: Proceeding at World Congress, International Society of Nephrology, at Melbourne, Australia 2019.

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Objective: The purpose of this manuscript is to highlight the potential of prolonged intermittent renal replacement therapy in hemodynamically unstable children.

Abstract:

This guideline serves to give an expert recommendation on the use of Prolonged intermittent replacement therapy in pediatric patients. The evidence was collected in conjunction with medical librarians from both India and the Cleveland Clinic hospital system to find relevant articles. The PCCRT workgroup then worked to grade and analyze all articles for relevancy. All recommendations were graded for strength of evidence and these recommendations should serve as a guide for local practices to be able to institute PIRRT in children who are hemodynamically unstable. Currently prolonged intermittent renal replacement therapy (PIRRT) has emerged as a modality that provides the same advantages as CRRT at a cheaper cost. The data on PIRRT is found primarily in studies with adult and as such the protocols used have been extrapolated to provide these therapies in children. These guidelines will provide management on prescribing PIRRT in a child in an intensive care setting. The use of PIRRT in adults has been well established in their efficacy for treating patients who are hemodynamically stable. While their use in children is understudied, the few studies available give credence to their benefits even in the absence of anticoagulants. While the lack of availability of pediatric studies makes it difficult to create evidence-based guidelines, this expert recommendation is a valuable first step in the continued study of PIRRT in this population.

Effect of pulse pressure, pulse pressure index and inflammation on the progression of chronic kidney disease in children from the CKiD study

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Objective: To understand the clinical significance of pulse pressure in terms of the progression of chronic kidney disease (CKD).

Abstract

Pulse pressure (PP), systolic blood pressure (SBP), Left ventricular mass index (LVMI), pulse pressure index (PPI) and inflammatory biomarkers are proven predictors for cardiovascular (CV) disease and chronic kidney disease (CKD) progression in adults. Their viability in children, however, has not been established. This study aims to investigate how increased levels of these factors correlate with progression of CKD and other markers of CV disease including left ventricular mass index (LVMI). This is a retrospective analysis of 892 pediatric patients (1-16 years) with CKD from the NIDDK Chronic Kidney Disease in Children (CKiD) registry. Data including demographics, cause of CKD (inflammatory vs. non-inflammatory), estimated glomerular filtration rate (GFR), systolic and diastolic blood pressure (SBP and DBP), pulse pressure (PP) and angiotensin-converting enzyme inhibitors/angiotensin receptor blockers(ACEi/ARB) usage were included for analysis. A strong inverse relationship was found between increased SBP, DBP, and PP with loss of GFR and increases in LVMI. These results are similar to those seen in adult populations. In addition, our inflammatory CKD subgroup showed significantly higher serum creatinine (SCr), SBP, DBP, PP values with significantly lower serum albumin levels. A subgroup analysis demonstrated that SBP, DBP, and PP all correlated significantly with LVMI in inflammatory CKD patients, however, this was not seen in the non-inflammatory sub-group. In order to prevent future decline in renal function and reduced inflammation proper blood pressure control must be maintained.

This study is one of the first to assess children with CKD using non-invasive surrogate markers of arterial stiffness. We have demonstrated a strong inverse relationship between SBP, DBP, and PP with CKD outcomes such as loss of GFR and increases in LVMI in children similar to adults. In addition, we have demonstrated differences in these relationships by CKD etiology as inflammatory or non-inflammatory which is unique and hypothesis generating. Our inflammatory CKD subgroup children showed significantly higher SCr, SBP, DBP, PP and significantly lower serum albumin levels. Subgroup analysis of CKD patients demonstrated that SBP, DBP, and PP were all significantly correlated with LVMI in inflammatory CKD patients but not non-inflammatory. These findings suggest that effective blood pressure control is of paramount importance in children with CKD due to inflammatory causes to decrease their long-term CV morbidity and mortality, and to reduce their rate of decline in renal function.

Effectiveness of Plant Flavone Apigenin *versus* Methoxy-Apigenin in Prostate Cancer

Suder Natesan, Krishna Mukunda, Amritha Mukunda, Eswar Shankar, Sanjay Gupta

Prostate cancer is a major public health problem worldwide and is the second leading cause of death in the United States. Radiation and chemotherapy remains the major treatment options for most prostate cancer patients, however tumor attain resistant leading to failure of radiation and chemotherapy. Targeted therapies may negatively affect patients' quality-of-life, pose financial burden and perhaps not always be successful. Dietary agent such as apigenin (4',5,7-trihydroxyflavone), a plant flavone has shown to possess anticancer properties and alters pathways that regulate tumor cell invasion and metastasis. Recent studies highlight apigenin's efficacy in reversing drug resistance in cancer stem cells and significantly enhancing the effects of chemotherapy. Nevertheless, the shortcoming of apigenin is its rapid degradation and clearance from systemic circulation without reaching the target tissue. Therefore, modification in apigenin structure could lead to the development of more effective derivatives. We investigate the efficacy of methoxy-apigenin, which is an addition of a methoxy group to apigenin, in targeting prostate cancer. In this study, we compared the effect of apigenin (Api) and methoxy-apigenin (M-Api) on the growth and proliferation of two metastatic prostate cancer cell lines. Androgen-responsive human prostate cancer C4-2B cells and androgen-refractory PC-3 cells were treated with varying concentrations of Api or M-Api (0.3125μM to 20μM) followed by MTT and crystal violet assay to investigate the effect on cell proliferation. Treatment of cancer cells with M-Api showed a marked decrease in cell viability and was more potent than Api in both cell lines. Crystal violet assays demonstrate similar findings on both cancer cell lines. Our results demonstrate higher effectiveness of M-Api over Api and warrants further investigation.

Neonatal Acute Kidney Injury: A survey of perceptions and management strategies amongst pediatricians and neonatologists

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There are no conflicts of interests to be declared by any author.

Background: Neonatal Acute Kidney Injury (AKI) occurs in 40-70% of critically ill newborn infants and is independently associated with increased morbidity and mortality. Understanding the practice patterns of physicians (neonatologists and pediatricians), caring for neonates in India is important to optimize care and outcomes in neonatal AKI.
Objective: The aim of this study was to identify differences in physician's perception and practice variations of diagnosis, management, and follow-up of newborn infants with AKI in India. **Methods:** An online survey was used to assess neonatologists and pediatricians in India caring for newborn infants with AKI.
Results: Out of 800 correspondents, 257 (135 neonatologists and 122 pediatricians) completed the survey, response rate being 32.1%. Resources available to the respondents included level III NICU (59%), neonatal surgery (60%), dialysis (11%), and extracorporeal membrane oxygenation (ECMO, 3%). Most respondents underestimated the risk of AKI due to various risk factors such as prematurity, asphyxia, sepsis, cardiac surgery and medications. Less than half the respondents were aware of the AKIN or KDIGO criteria, which are the current standard criteria for defining neonatal AKI. Only half of the respondents were aware of the risk of CKD in preterm neonates and nearly half were unaware of the need to follow up with a pediatric nephrologist.

Conclusions: Similar to other regions worldwide, there exists a knowledge gap in early recognition, optimal management and follow up of newborn infants with AKI amongst Indian physicians.

Systematic Review and Pediatric Continuous Renal Replacement Therapy Consensus Guidelines for Management of Hyperammonemia in Pediatric Patients

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There are no conflicts of interests to be declared by any author.

Background: Hyperammonemia is the excessive accumulation of ammonia in blood and can lead to grave consequences in the form of cerebral edema and severe neurological impairment. In infants and children, common causes of hyperammonemia include urea cycle disorders (UCD) or organic acidemias. In pediatric populations, the management of hyperammonemia has shown to be difficult due to the non-specific clinical symptoms, the age specific etiologies, and the lack of consensus in treatment plan.

Objective: This systematic review assessed the published literature to comprise guidelines for non-renal replacement therapy (NRRT) and renal replacement therapy (RRT) in neonates and children with hyperammonemia.

Methods: A literature search was performed on PubMed/Medline, Embase, and Cochrane databases. Studies reporting increased ammonia in non-renal replacement therapy and renal replacement therapy in pediatric patients were included. The Pediatric Continuous Renal Replacement Therapy (PCRRT) workgroup analyzed the studies to propose recommendations and evaluated the strength of each.

Results: Out of the 118 studies considered for full-text review, 25 studies met the inclusion criteria. There were 23 patients were treated with peritoneal dialysis with 65% success rate, 5 patients were treated with intermittent hemodialysis (HD) with 100% success rate, and 92 patients were treated with continuous RRT (CRRT) with 60% success rate. Additionally, 3 patients were treated with extracorporeal membrane oxygenation (ECMO) combined with CRRT and had 100% success rate.

Conclusion: This review consists of expert guideline recommendations on hyperammonemia requiring RRT in pediatric populations. The panel recommended CRRT as the first line of therapy and recommended HD when rapid ammonia clearance was required. The panel also suggested the use of CRRT combined with ECMO in hemodynamically unstable neonates. Additional studies are required to further strengthen the recommendations made in this review.

Jinwook Park

Cardiac arrest and pulmonary arterial hypertension in scurvy

Pulmonary arterial hypertension (PAH) is a rare, progressive disease of the pulmonary vasculature, involving a group of clinical conditions that result in precapillary pulmonary hypertension (PH). In a few confirmed cases, scurvy has been linked to PAH, and can present as a severe, but reversible, cause of this condition through non-hypoxic activation of hypoxia-inducible transcription factors (HIF) and low nitric oxide (NO) levels in the pulmonary vasculature, leading to subsequent pulmonary vasculopathy and an exaggerated pulmonary vasoconstrictive response. In this case, a delayed diagnosis of scurvy resulted in fatal PAH. Our patient is a 73-years–old female, 10 years post-bariatric surgery with a current weight of 80kg. Her past medical history is also significant for osteoarthritis and right hip replacement. Upon admission, she presented with two month history of progressive exertional dyspnea, which progressed to dyspnea at rest. Her physic al exam was positive for cardiac and vascular concerns, hepatomegaly with shifting dullness, and scattered ecchymosis bilaterally. Laboratory data uncovered mild acute kidney injury with creatinine 1.26, BUN 25, and normal electrolyte levels. There was mild elevation in total bilirubin (1.4) and direct bilirubin (0.7). Electrocardiogram (ECG) showed normal sinus rhythm, right axis deviation, right ventricular hypertrophy, and a right bundle branch block, in addition to signs of right ventricular strain, including ST depression and T-wave inversion in V2-5. Echocardiography (ECHO) showed normal global systolic function of left ventricle, and an ejection fraction (EF) of 75% with normal diastolic function. There was evidence of increased right ventricular wall thickness, as well as severe right ventricular dilatation. The estimated right ventricular systolic pressure (RVSP) was measured at 112. Pulmonary function tests (PFTS) showed a mild decline in diffusing capacity for carbon dioxide (DLCO). The patient was initially diagnosed with pulmonary hypertension, confirmed by right heart catheterization RHC. For treatment of PAH, the patient was started on diuretics (furosemide and spironolactone) and oxygen at 6 liters per minute (L/Min). Sildenafil (20 mg) was administered three times a day (TID) with no hemodynamic improvement. Inotropic therapy was initiated, but also without clinical improvement. A reviewed history revealed that her diet was significantly unbalanced, lacking fruits and vegetables, and that the patient had poor compliance to vitamins and supplements prescribed post-bariatric surgery. Given the patient's history and presentation, vitamin C deficiency was suspected, and levels were ordered. However, before these results were available, the patient developed severe cardiogenic shock that was non-responsive to maximal medical supportive therapy, resulting in her death. Post-mortem, the previously sent lab results revealed an ascorbic acid level of zero and a negative full workup for WHO group 1 pulmonary arterial hypertension. It is reasonable to assume that administration of supplemental doses of vitamin C may have prevented this outcome as reported in few occasions in the literatures.

Title: Ictal lid movements - blinks and lid saccades

Authors: **Nataliya Pyatka, MD**, Prasanna Gajera, MD, Guada Fenandez, MD, Aasef G. Shaikh, MD, PhD;

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Objective: to describe unique cases of eyelid movements seen in epilepsy

Abstract:

Two types of lid movements, lid saccades and blinks, have discrete kinematic properties and physiology. These differences are reflected in distinct phenomenology of disorders affecting their neural substrate. Proof of this principle was seen in two cases, one with parietal eyefield epileptiform discharges and the other with temporal lobe seizures. The lid movements in the patient with epileptiform discharges in the eyefield were rhythmic, yoked, and had rapid upward component that instantaneously followed slow downward drift. These cyclic movements strikingly resembled nystagmus, but unlike typical eye nystagmus, the rapid upward component was pathological and seemed to involve saccadic mechanism. We suggest terms "ictal lid saccade" or "ictal lid nystagmus" to describe such phenomenology. In contrast, the patient with temporal lobe seizures had ipsilateral lid movements with rapid downward trajectories resembling reflex or spontaneous blinks. The term "ictal blink" is appropriate for this phenomenology.

Conflict of Interest: none

Novel bioengineered immune therapeutics to control autoimmunity in type 1 diabetes

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Text:
Type 1 diabetes is an autoimmune disease associated with hyperglycemia. Increased glucose flux enhances the hexosamine biosynthetic pathway and intracellular posttranslational modification of proteins by the sugar N-acetyl glucosamine (GlcNAc) in a process called O-GlcNAcylation. We discovered that hyperglycemia increases the O-GlcNAcylation of the transcription factor, nuclear factor kappaB (NF-kB) c-Rel at serine 350. O-GlcNAcylation of c-Rel activates c-Rel-dependent transcription of proautoimmune cytokines in T cells. Hence, blocking the function of O-GlcNAcylated c-Rel will have benefits in controlling autoimmune diabetes by diminishing the T cell-mediated autoimmunity. We developed a novel peptoid, called peptoid3, by molecular modeling and de novo synthesis, which specifically blocks the function of O-GlcNAcylated c-Rel. We found that peptoid3 treatment significantly decreased T cell receptor-induced, O-GlcNAcylation-dependent expression of proautoimmune cytokines. Peptoid3 treatment selectively affected autoimmunity-associated genes and did not exhibit toxicity on survival or proliferation of T cells. Broad inhibition of hexosamine biosynthetic pathway or NF-kB will cause many side effects due to their ubiquitous importance in multiple biological functions. Therefore, inhibitors of O-GlcNAcylated NF-kB c-Rel function may prove long-sought-after specific molecular therapeutic to diminish autoimmunity in type 1 diabetes.

Inducing immunological chimerism in DNC organ recipients.

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Organ recipients are treated with aggressive drug regimens to eliminate the recipient's functional immunity while adding a significant physical stress to the patients. Few researchers have proposed that the administration of donor bone marrow at the time of organ engraftment to induce immunologic chimerism can improve the outcome of the transplant. This technique was viewed as safe but showed varying efficacy. A variance perhaps due to impact of brain death (BD) on marrow function. We believe an important and under-appreciated component in this regard is the impact of BD on NO bioactivity, specifically how it impacts the main regulators of nitric oxide(NO) signaling, S-nitrosothiols (SNOs). We have determined in a pre-clinical model that induction of BD results in rapid depletion of RBC SNO-Hb levels. Current donor management practices do not account for changes in S-nitrosylation. By targeting NO bioactivity, we have a new mechanism for correcting this system-wide dysfunction, including improved bone blood flow to preserve marrow function. We have developed a first in class S-nitrosylating agent, ENO, that improves physiologic status in a pre-clinical BD preparation and we have successfully completed Phase 1 safety testing. As an initial step, we wanted to characterize the impact of brain death on the functionality of bone marrow obtained from human donors and also from a large animal model. Our data following flow cytometry determined that the percentage of CD34+ cells increases after brain death. However, their in-vitro proliferative capacity declines demonstrated by a decline in BFU-E colonies. Of additional importance, we found a positive correlation between SNO levels and BFU-E colonies. Next, in our swine brain dead models we found a similar decline in the in-vitro proliferative capacity of the bone marrow. However, this dysfunction was corrected by administration of ENO for the 24 h period following induction of BD, which resulted in 801% increase in BFU colonies compared to the control group. Thus, the addition of an S-nitrosylation agent during donor support could improve the engraftment potential of bone marrow from deceased donors and impart functional benefit to the graft recipients.

The importance of diabetes distress and patient retention in glycemic control of patients with Type 1 Diabetes transitioning from pediatric to adult care

Amith Rao (Northeast Ohio Medical University), Kathryn Rodeman, Anna Konigsberg, Jennifer Iyengar, Scott Soleimanpour, University of Michigan

The transition from pediatric to adult care in patients with type 1 diabetes (T1D) is fraught with challenges leading to poor glycemic control and diabetes-related microvascular complications. An underappreciated challenge in all patients with diabetes is diabetes distress, which refers to the emotional/mental burden associated with living with diabetes. Previous studies have shown that increased diabetes distress correlates with poor glycemic control, but the role of diabetes distress in the transition to adult care is unknown. We hypothesize that glycemic control in transition patients is influenced by a combination of both diabetes distress and patient retention in the adult transition clinic during the transition period. To test this hypothesis, we performed a prospective assessment of patients entering the UM Diabetes Transition Program in the first year following the transition from pediatric to adult care (n=87). We determined diabetes distress using the validated Problem Areas In Diabetes (PAID) survey at the time of transition, and followed the frequency of adult endocrinology visits in the first year and HbA1c concentrations in the pre-transition, at transition, and post-transition period. We observed a slight decline in HbA1c levels after each endocrinologist visit for patients who attended at least 3 visits within the first year (n=71). We also observed that patients with severe distress (PAID>40, n=8) tended to have higher pre-transition and transition HbA1c levels than those with moderate (PAID 20-40, n=12) or low distress (PAID<20, n=37). Patients with moderate distress, however, showed a significantly lower retention rate ($p<0.01$) and higher post-transition HbA1c than those with severe and low diabetes distress. Importantly, patients who saw their adult endocrinologist at least 2 times in the year after transition had a significantly lower pre-transition ($P<0.02$) and transition HbA1c ($P<0.002$). Patients who saw their adult endocrinologist >3 times in the year after transition also showed a significant decrease in post-transition A1c ($P<0.05$). These data suggest that diabetes distress and patient retention are significant factors in glycemic control of transition patients. The findings presented have implications towards potential improvement of the existing standard of care regarding T1D patients transitioning from pediatric to adult care.

Farhad Sanati DO

Title:

A Unique Case of Small Cell Lung Cancer Presenting as only Refractory Hypokalemia, Miniaci, Anthony DO MPH; Sanati, Farhad DO; Margaria Bryan

Case:

The patient is a 65 year male who presented with worsening dyspnea on exertion and proximal muscle weakness, consistent with a CHF exacerbation. The patient was treated for an exacerbation of CHF, however, throughout treatment he remained hypokalemic despite repeated replacement. Further work up revealed an elevated ACTH and cortisol, and Chest CT and subsequent biopsy confirmed small cell lung cancer (SCLC). Eventually the patient progressed to developing thrombocytopenia, and started demonstrating cushionoid features consistent with a Neuroendocrine carcinoma.

Literature review:

Lung cancer is the second most common cancer and accounts for 14% of new cancers. SCLC is a subset of Lung Cancer, which is a neuroendocrine carcinoma that exhibits aggressive behavior making early identification imperative. Only 1-5% of SCLC cases present with ACTH secretion, making these rare cases. Due to the neuroendocrine nature of the disease, this is often associated with many paraneoplastic syndromes such as SIADH and Cushing's syndrome. Previous cases with similar pathology have found that thrombocytopenia can also be present.

Unique Aspect

For this patient's SCLC, the only presenting symptom was hypokalemia. This was different from other cases, as they have had features such as thrombocytopenia or cushingnoid features, which eventually did appear near the end of the patient's course. This potentially demonstrates that refractory hypokalemia may be the first and only presenting abnormality in SCLC with ACTH secretion.

Recommendations

Clinicians should keep refractory hypokalemia in mind as they treat patients with low potassium, and consider workup to rule out SCLC as early detection can significantly improve outcomes.

Conclusions:

We present a patient of a patient who was found to have a unique case of SCLC that was found through refractory hypokalemia. Additional symptoms such as thrombocytopenia were eventually found after diagnosis was confirmed. Refractory hypokalemia could potentially help guide clinicians in the future.

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Monika Satoskar

Title: Evaluation of immune prophylactic response of GLP grade *Leishmania major* centrin deleted (*LmCen-/-*) live attenuated parasites as a vaccine against Visceral Leishmaniasis in Hamsters.

Authors: Monika Satoskar, Sanika Satoskar, Rajiv Sastry, Subir Karmakar, Nevien Ismail, Ranadhir Dey, Hira L Nakhasi

Background: Leishmaniasis is a vector-borne parasitic disease affecting millions of people worldwide. To date, there is no licensed vaccine available against human Leishmaniasis. It has been shown that low dose of dermatotrophic wild type *Leishmania major* infection (leishmanization) confers protection against Cutaneous Leishmaniasis (CL) as well as cross-protection against Visceral Leishmaniasis (VL). However, such a method of immunization is not practical because of the great risk of infection in a naïve population. Therefore, genetically modified live attenuated parasites that are non-pathogenic might induce the same protective immunity as leishmanization. We have developed centrin-gene deficient *Leishmania major (LmCen$^{-/-}$)* using CRISPR-Cas methodology and evaluated the safety, immunogenicity as well as protective efficacy against *L. donovani* challenge. Previous studies from our laboratory demonstrated that lab grown *LmCen-/-* induced significantly strong host protective immune response against *L. donovani* infection in hamster model. Six weeks post-immunization hamsters were infected with *L. donovani* by needle injection or by infected sand flies. In both sets of experiments, nine months post-challenge, non-immunized hamsters developed severe pathology of VL, while immunized hamsters showed significantly lower parasite burden in liver and spleen. We also evaluated the cellular immune response between immunized & non-immunized hamsters after challenge with wild type parasites. Spleen cells from *LmCen-/-* immunized and challenged hamsters produced significantly more Th1-associated cytokines including IFN-γ and TNF-α, and significantly reduced expression of the anti-inflammatory cytokines IL-10 and IL-21, compared to non-immunized and challenged animals.

Objective: The goal of the study was to evaluate the safety and efficacy of the *LmCen-/-* parasites generated under GLP (Good Laboratory Practice) condition in Hamster VL model

Results: In this study, we compared the immune response of GLP grade and lab grown *LmCen-/-* parasites. Similar to intradermal immunization of hamsters with lab cultured *LmCen-/-* parasites, GLP grade parasites did not develop any detectable lesion after immunization suggesting these parasites are safe as an immunogen. Spleen and ear cells from either GLP grade *LmCen-/-* immunized or lab grown *LmCen-/-* immunized hamsters produced comparable Th1-associated cytokines including IFN-γ and TNF-α. IgG_{2a} antibodies associated with protection were similar between the groups as well. Studies are underway to evaluate the efficacy of GLP grade parasite against visceral infection.

Conclusions: Our studies demonstrate that the GLP grade *LmCen-/-* mutant parasites are safe and immunogenic as lab grown *LmCen-/-* and have a potential to be an effective vaccine against VL.

Sanika Satoskar

Title: Immunization with *Leishmania major* centrin knock-out (*LmCen$^{-/-}$*) parasites induces skin resident memory T cells that play a role in protection against *Leishmania* infection

Authors: Sanika Satoskar, Monika Satoskar, Rajiv Sastry, Nevien Ismail, Subir Karmakar, Parna Bhattacharya, Ranadhir Dey, and Hira L. Nakhasi

Background: Leishmaniasis is a vector-born disease transmitted through a sand fly bite with no available vaccine. Vaccination through leishmanization with *Leishmania major* has been used successfully but is not safe. Recently, we have demonstrated immunization with live attenuated *LmCen$^{-/-}$* parasite protects against Leishmaniasis via induction of host cellular immunity and is safe in various animal models.

Objective: Resident memory T cells (T_{RMs}) are considered the first line of defense against infections invading the host through the epithelial barrier. The goal of this study is to evaluate the generation and function of skin T_{RMs} post *LmCen$^{-/-}$* immunization compared to that generated through leishmanization.

Results: We examined chemokine receptors controlling the generation and survival of skin T_{RMs}, as well as effector and recruitment function of T_{RMs} in *LmCen-/-* and Leishmanized immunized mice after challenge with *WT* parasites. Expression of chemokine receptors controlling the formation of T_{RMs} in the skin was significantly higher in the skin of *LmCen-/-* immunized mice, compared to infected (Leishmanized) mice, at 20 weeks post immunization/infection. In addition, epithelial cytokine production, such as IL-15, IL-33 and TNFa was significantly higher in the skin of immunized mice. Upon virulent challenge, TH1 cytokines production in the skin, measured by RT PCR, was similar in immunized mice compared to healed mice. Furthermore, T_{RM} specific activation protein, ITGA-1, was higher in the treated groups compare to the nonimmunized control.

Conclusions: Results show that immunization with live attenuated parasites generates functional population of skin T_{RMs} compared to leishmanization which play an important role. Upon challenge, both immunized and leishmanized mice developed similar effector immune response.

Anti-MOG antibodies in Pediatric Neuroinflammatory Demyelinating Diseases

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Abstract:

Introduction:
Central nervous system (CNS) oligodendrocyte-derived myelin contains myelin oligodendrocyte glycoprotein (MOG), a known auto-antigen in experimental and clinical inflammatory demyelinating diseases. Highly sensitive and specific anti-MOG antibody testing became commercially available in October 2017 in the United States. Thus, our understanding of anti-MOG-related CNS demyelinating disease in clinical, non-research, cohorts is limited.

Objective: To characterize pediatric anti-MOG positive patients (MOG+).

Methodology:
We retrospectively reviewed pediatric and adolescent patients presenting with neuroinflammatory symptoms to Akron Children's Hospital (ACH) from January 1, 2014 through May 24, 2019. Using Epic's Slicer-Dicer Analytic tool, we identified patients with CNS inflammatory disease diagnoses including: acute disseminated encephalomyelitis (ADEM), acute optic neuritis (AON), encephalitis, transverse myelitis, neuromyelitis optica spectrum disorder, and multiple sclerosis. Charts were reviewed for anti-MOG testing, and anti-MOG positive patients (MOG+) were included in this analysis. ACH Institutional Review Board exemption was obtained.

Results:
8/35 tested patients were MOG+. 6/8 MOG+ (75%) were female, with a mean presenting age of 7.25 years. Despite heterogeneity of presenting symptoms, ADEM was the most common diagnosis (6/8 MOG+). The other two diagnoses were AON and acute cerebellar ataxia. No MOG+ had comorbid autoimmune diagnoses, though one had an asymptomatic Leber Hereditary Optic Neuropathy gene mutation. Two MOG+ patients have chronic relapsing disease requiring disease modifying therapies; the remainder were monophasic and responded to high dose corticosteroids. Two initially MOG+ were anti-MOG negative 6-12 months after initial presentation and have not relapsed. 6/8 MOG+ have on-going neurologic symptoms or disability beyond 6 months of follow-up.

Conclusions:
In our small cohort, ADEM was the most common initial diagnosis, and MOG+ was associated with persistent neurologic disability. Ideally, as clinical phenotypes emerge, early identification of MOG+ patients may lead to faster treatment, better prognostication, and implementation of acute vs chronic treatment depending on risk for relapsing disease.

Diplopia and a lazy eye

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Abstract

Internuclear ophthalmoplegia (INO), is a cause of blurry vision with diplopia in patients caused by dysfunction of extraocular movements of eye. Adduction of the affected eye is weak with contralateral abduction nystagmus.

A 59 year old gentleman with past history of glaucoma, hyperlipidemia, coronary artery disease status post stenting of the left anterior descending artery in 2017, prostate adenocarcinoma in remission post external beam radiotherapy, and erectile dysfunction presented with sudden onset of lightheadedness and blurred vision. He denied any current or past history of remitting paresthesia, limb weakness or slurred speech. No sensation of "falling curtain" over field of vision, no headaches fever or neck stiffness. After one hour of the symptoms, he presented to the emergency department.

Medications included doxazosin, latanoprost, simvastatin, aspirin, and viagra (last taken 3 days prior). The patient quit smoking and drinking alcohol more than 5 years ago and denied any illicit drug use or sexually transmitted diseases. He has been on disability since diagnosed with cancer and previously worked as a custodian.

On exam, vitals were temperature 37, heart rate 46, respiratory rate 14, blood pressure 137/72, and 100% on pulse oximetry. Pupils were round and reactive to light, red reflexes were seen and no obvious abnormality seen on fundoscopic exam. On tonometry, left eye pressure was 11 mmHg and right eye pressure was 12 mmHg. Right eye demonstrated impaired adduction with contralateral left eye nystagmus on leftward gaze. Patient had reproducible diplopia on leftward gaze which also resolved with covering of the right eye. Otherwise cranial nerve exam unremarkable. There was no demonstrable motor or sensory deficits and no cerebellar signs.

CT and MRI of the head showed nonspecific white matter changes, echocardiogram and carotid duplex were normal. Patient was discharged with neurology follow up, new medications included aggrenox and atorvastatin.

Reviewing Disasters: Hospital Evacuations in the United States from 2000-2017

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Objectives

- Discuss hospital evacuations from 2000-2017
- Showcase the variances in the data as categorized per state
- Elaborate on the causes of evacuations in the United States, ranging from external, internal, and man-made
- Deliberate the implications of this data by examining its applicability in disaster planning
- Consider the necessity for a national database to report incidences of evacuations

Abstract

Introduction
Between 2000 to 2017, there were over 150 hospital evacuations in the United States. Data received from 35 states primarily concentrated in California, Florida, and Texas. The study aimed to investigate US hospital evacuations, compiling the data into external, internal, and man-made disasters; thus, creating a risk assessment for hospital disaster planning.

Methods
Reports were retrieved from Lexis Nexis, Google, and PubMed databases, and categorized according to evacuees, duration, location, and type. These incidents were grouped into three classifications: external, internal, and man-made. The study design included partial and full evacuations.

Results
There were a total of 154 reported evacuations in the US. 110 (71%) external threats, 24 (16%) man-made threats, and 20 (13%) internal threats. Assessing the external causes, 60 (55%) attributed to hurricanes, 21 (19%) wildfires, and 8 (7%) storms. From the internal threats, 8 (40%) attributed to hospital fires and 4 (20%) chemical fumes. From the man-made threats, 6 (40%) attributed to bomb threats and 4 (27%) gunmen. From the 20 reported durations of evacuations, 9 (45%) lasted between 2 to 11:59 hours, 6 (30%) over 24 hours, and 5 (25%) up to 1:59 hours.

Discussion
Over 70% of hospital evacuations in the US were due to natural disasters. Compared to 1971-1999, there was an increase in internal and man-made threats. Exact statistics on evacuees, durations, injuries, and mortality rates were unascertainable due to a lack of reporting. In light of the limitations, it is recommended to implement a national registry to report incidences of evacuations to assist with disaster and infrastructure planning.

Conclusion
From the reported evacuations, the greatest number were due to external threats. This resulted in decreased patient-care along with increased risks. Unreliability of reports and missing information has further led to increased hospital vulnerability to future disasters due to poor planning.

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Conflict of Interest: Neither author has any potential conflicts of interest to disclose.

A very rare case of venous thromboembolism May-Thurner Syndrome

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Funding: None
Conflict of Interest: None
Authorship: All authors had access to the data and a role in writing this manuscript

Objectives

- Clinicians should have a high index of suspicion for MTS in the presence of unprovoked DVT in the left lower extremity, recurrent left sided DVT and/or signs of chronic venous hypertension.
- Angioplasty and stenting of the affected lesion and subsequent antiplatelet therapy is the definitive treatment for MTS.
- Evaluation for May-Thurner Syndrome should be considered in patients presenting with an unexplained cause of VTE, as diagnosis can influence the duration of anticoagulation therapy.

Abstract

A 65-year-old African American gentleman with past medical history of hypertension and coronary artery disease presented with left lower extremity pain and swelling of the leg for five days. He had no history of leg trauma, recent surgery, bed rest, travel, malignancy, previous clotting episodes or family history of hypercoagulable disorders. Patient regularly ambulates. He is a lifetime non-smoker and does not take any medication. His left lower extremity was swollen from the calf down to the ankle and foot, tense, erythematous and tender to palpation. Dorsalis pedis and posterior tibial pulses were weakly palpable. Homan's sign was appreciated while the rest of the physical exam was unremarkable. Duplex ultrasound of the left lower extremity showed thrombi in the left popliteal, posterior tibial and peroneal veins. CT abdomen and pelvis with IV contrast demonstrated significant compression of the left common iliac vein as it crosses posterior to the left internal iliac artery, consistent with May-Thurner Syndrome (MTS). Spiral chest CT was significant for subsegmental emboli in the bilateral lobe pulmonary arteries. Patient was started on anticoagulation, then he was referred to an advanced vascular center to consider the need for angioplasty and stenting and for possible thrombolysis.

May-Thurner Syndrome (MTS) was first described in 1908 by Virchow, who observed that iliofemoral vein thrombosis was five times more likely to occur in the left leg than in the right leg. May and Thurner discovered an anatomical variant where the right iliac artery compressed the left iliac vein against the fifth lumbar vertebra. Clinicians should have a high index of suspicion for MTS in the presence of unprovoked DVT in the left lower extremity and/or signs of chronic venous hypertension. Angioplasty and stenting of the affected lesion is the definitive treatment for MTS, while anticoagulation management is similar to patients with provoked VTE. Therefore, it can be argued that in patients with an unexplained cause of VTE, investigation for MTS if clinically suspected can impact management decisions.

An uncommon adversity, a true key or double edge?

Ali Varasteh MD, Jehad Azar MD, Nabilah Abdullah MD, Vasant Temull MD, Keyvan Ravakhah MD

Introduction

Pembrolizumab is a selective anti-programmed cell death-(PD-1) humanized monoclonal antibody which inhibits (PD-1) activity through interacting with PD-1 receptor on T-cells blocking its interaction with PD-1 ligands. Antagonising the PD-1 pathway inhibits the negative immune regulation caused by PD-1 receptor signaling; therefore it induces anti tumor response via reversing T-cell suppression. Pneumonitis is a rare side effect of PD-1 Inhibitors commonly misdiagnosed as pulmonary infection.

Case presentation

We present a case of 60-year-old woman with stage 4 adenocarcinoma of the lung which was diagnosed on May 2018 presented with 2 day history of shortness of breath. She was treated with chemotherapy (carboplatin and pemetrexed) and radiotherapy. Several months later a biopsy of the left adrenal gland metastasis was positive for over-expression of PD-1 by 95%. She was subsequently started on pembrolizumab 200 mg intravenous treatment every 3 weeks with total of 4 treatments. Her last dose was 2 weeks prior presentation. The patient was admitted with shortness of breath, productive cough , hemoptysis and pleuritic chest pain.

Initial blood tests demonstrated white blood cell count of 13.7 x10/L9 and and hemoglobin 9.9 g/L. Liver and renal function tests were normal. Lactic acid 1.4 mmol/L, procalcitonin 0.28 ng/ml and C- Reactive protein, 180 mg/L. An arterial blood gas in the room air showed pH of 7.45, pCO2 31, pO2 78 and HCO3 21. ECG was evident of sinus tachycardia. Blood and sputum cultures, influenza antigen, urine legionella, MRSA culture from nasal swab, and respiratory syncytial virus antigen were negative. Chest X- Ray showed bilateral opacities. CT of the chest was remarkable for signs of remission, however, a new diffusely scattered ground-glass opacities and attenuation with interlobular septal thickening was evident of severe pneumonitis. Patient was diagnosed with Grade 2 anti- PD1 (Pembrolizumab) induced pneumonitis.

She was then admitted to the Intensive Care Unit, started on conservative management that included BiPAP, IV antibiotics and systemic steroids. The patient showed gradual improvement back to her baseline upon discharge.

Discussion

Pneumonitis is a rare but severe side effect associated with PD-1 inhibitors, it is imperative to have a high index of suspicion, as early diagnosis and treatment with systemic steroids will prevent an otherwise fatal disease. The diagnosis is usually delayed due to lack of similar published reported cases. We report this case in order to raise awareness about a rare but commonly fatal side effect of PD-1 inhibitors.

Mortality in Nursing Home Evacuations in the United States From 1995-2017

Authors: Sharma, Aishwarya[1]; Mace, Sharon[2]; Caicedo, Daniel[1];

Affiliations:

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2. Professor of Medicine, Cleveland Clinic Lerner College of Medicine at Case Western Reserve University, Cleveland, OH (maces@ccf.org)

OBJECTIVES

- Discuss nursing home evacuations from 1995-2017
- Showcase the variances in the data as categorized per state
- Elaborate on the causes of evacuations in the United States, ranging from external, internal, and man-made
- Review mortality statistics to assess efficiency of current infrastructure-planning
- Deliberate the implications of this data by examining its applicability in disaster planning
- Consider the necessity for a national database to report incidences of evacuations

ABSTRACT

Introduction
There are an estimated 15,600 nursing homes with a total of 1.4 million residents in the United States. The number of residents will continue to increase due to the aging population, and the associated morbidities will make it difficult to evacuate them safely. This study is the first of its kind to provide an analysis on the number of nursing home deaths caused by external and internal evacuation events.

Methods
Information from Lexis Nexis and PubMed databases were compiled and limited to news articles from 1995-2017. The study included the reason for evacuation, injuries, deaths, and locations within the US.

Results
From 1995 to 2017, there were a reported total of 51 evacuations and 141 deaths in nursing homes. 27 (53%) due to external events, resulting in a combined 121 (86%) deaths, and 24 (47%) due to internal events, resulting in a combined 20 (14%) deaths. Hurricanes were the primary cause of death, followed by fires and floods. The number increased the greatest between 2005 to 2008.

Discussion
Over 50% of nursing home evacuations in the US were secondary to natural disasters. Exact data on evacuees, durations, injuries, and mortality rates were unascertainable due to a lack of reporting. In light of the limitations, it is recommended to implement a national registry to report incidences of evacuations to assist with disaster and infrastructure planning.

Conclusion
External events have the greatest impact on loss of life. Internal disasters are about equal in number of incidents; however, external events have a greater mortality rate. In view of the increasing likelihood of natural disasters related to global warming, a drastic improvement of standard evacuation procedures of long-term nursing homes is imperative to decreasing mortality of nursing home residents. There also needs to be a national standardized method of reporting evacuations in order to better analyze data on nursing homes.

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Conflict of Interest: Neither author has any potential conflicts of interest to disclose.

Morphological characteristics of progenitor and non-progenitor cells derived from human cartilage using time-lapse phase contrast microscopy

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1. Hathaway Brown School
2. Department of Biomedical Engineering, Lerner Research Institute, Cleveland Clinic

Abstract

Stem and progenitor cells have the capacity to differentiate and play a vital role in tissue and cartilage regeneration. It is essential to be able to distinguish connective tissue progenitors from non-connective tissue progenitor cells in order to use them therapeutically. Accordingly, the goal of this study was to use time-lapse phase contrast microscopy to examine the morphological characteristics of progenitor and non-progenitor cells in order to differentiate them for use in cellular therapies. Tissue samples from five patients with knee osteoarthritis were used for analysis. Phase contrast video of cultured progenitor cells was gathered and sequentially analyzed over a time period of ten days. Using ImageJ software, images were background corrected and analyzed with metrics for area, perimeter, circularity, and diameter being collected for each progenitor and non-progenitor. Cell samples demonstrated that on day 1 the area of progenitors (mean of 60.8 um^2) was significantly greater than that of the non-progenitors (mean of 28.3 um^2, p-value $8.01x10^{-13}$), however the circularity was equal with a mean of 0.56. Comparing day 1 and day 10 non-progenitors, the area of day 10 non-progenitors (mean of 70.7 um^2) was greater than day 1 non-progenitors (mean of 28.3 um^2). However, the circularity of day 10 non-progenitors was less with a mean of 0.16 compared to a mean of 0.29 from the non-progenitor cells. Accordingly, the area metric of stem cells could provide a useful method for identifying progenitor cells to be used for cellular based therapies because of the significant increase in size over time.

Shiv Verma

Molecular Reprogramming in Prostate Cancer Cells after Enzalutamide Exposure

Shiv Verma, Eswar Shankar, Rajnee Kanwal, E Ricky Chan, Sanjay Gupta

Department of Urology, Case Western Reserve University, University Hospitals Cleveland Medical Center, Cleveland, Ohio 44106

Enzalutamide, a second-generation androgen receptor (AR) antagonist, has demonstrated clinical benefit in men with prostate cancer. However, it only provides a temporary response and modest increase in survival with a rapid emergence of resistance. Studies suggest enzalutamide function as AR antagonist, but the underlying mechanisms of enzalutamide-induced molecular programming is poorly understood. Here, we show that enzalutamide stimulates expression of a novel subset of genes distinct from androgen-responsive genes. We generated a cell model of enzalutamide resistance by prolong treatment of androgen-responsive human prostate cancer LNCaP cells with progressively increasing concentration of enzalutamide (LNCaP-ENZU) and compared with parental cell line by performing Next-Gen sequencing. RNA-Seq data analysis showed that genes including XIST, AKT3, ZNF655, IRS4, HOXB3, FBN2, FHL1, GSTP1, VCAN, KIAA0408 were more than 10 fold higher (log2 fold), and 10 genes including ZNF544, KLK2, CSMD1, ZG16B, SPDEF, AR, C1R1, FOLH1, HISTIHIB, and TNPR222 were down regulated (-10 to -12 log2 fold) in LNCaP-ENZU resistant cells, compared to parental cell line. Analysis anchored with TCGA and CCLE databases, demonstrated some genes exhibited epigenetic modification/alteration in promoter methylation *viz.* XIST, AKT3, FOLH1 and RALYL, which were hypermethylated in prostate tumor, compared to benign prostate tissue. In context to AR, gene network analysis using 'GENEMANIA' showed the genetic interaction with AR. For example, AKT3, HOXB3, and KIA0048 showed interaction with AR thru MTCL1 and FOLH1; whereas RALYL and KLK2 showed interaction with AR through cJUN. The differentially expressed genes of LNCaP-ENZU resistant cells overlapped with signaling pathways including IL6 signaling, glucocorticoid receptor signaling, immune response, inflammation, fatty acid signaling, drug resistance, bile acid biosynthesis, lipid metabolism, peroxisome signaling, and type II diabetes. These signaling pathways may activate downstream cytokines, transmembrane receptor and transcriptional regulators, which could further influence the expression of various target genes. Taken together, our findings demonstrate molecular reprogramming after enzalutamide exposure and identify some novel genes such as XIST, SPON2, KLK2 and ZG16B which may be used as therapeutic target to identify relapse/recurrence of castration-resistant prostate cancer after enzalutamide treatment.

Sheela Vaswani

Title: Early response to ketamine infusions for depression: comparison between genders.

Authors: Sheela Vaswani, BS; Subhdeep Virk, MD; Xiao Hui Zhou, RN; Anne-Marie Duchemin MD **Primary email:** svaswani@neomed.edu

Institution: The Ohio State University Department of Psychiatry, Wexner Medical Center

Objectives:

- Study ketamine's effect on depressive symptoms between male and female patients with major depressive disorder.
- Study which gender responds faster to ketamine treatment by administering MADRS questionnaire.

Abstract:

Introduction: Major Depressive Disorder is characterized by depressed mood, decreased energy, changes in sleep and appetite, anhedonia and suicidal ideation. FDA-approved antidepressants, which modulate monoamine neurotransmitters take several weeks to provide therapeutic relief. Recently, ketamine, a non-competitive NMDA receptor antagonist, has been used for treatment-resistant depression. Unlike other antidepressants, it is characterized by a rapid onset of action. Previous studies show a single-dose infusion of ketamine rapidly decreases suicidal ideation and provides anti-depressant effects. In rodents, ketamine was found to be metabolized differently between females and males. Females had greater concentrations of ketamine over the first 30 minutes in both the brain and plasma due to slower clearance rates. Additionally, estrogen and progesterone, may make females more sensitive to the effects of ketamine. Very few studies have examined the role of gender in response to ketamine in the clinical setting. We hypothesize females will respond earlier than men to ketamine treatment.

Methods: The study was approved by the Institutional Review Board and Participants signed consent. Patients (n=13, 6 male, 7 female) received 0.5 mg/kg intravenous infusion of ketamine for treatment-resistant depression biweekly as standard of care. Response was measured using the Montgomery Asberg Depression Rating Scale (MADRS). Scores at the 2nd visit (2-5 days after the 1st injection) were compared to scores at baseline.

Results: The average MADRS scores decreased 10.3% for men (from 37.7±9.7 to 33.8±11.0) and 22.6% for women (from 33.6±8 to 26.0±6.7) between the 1st and 2nd assessments. After one injection, 28% of women and 0% men had a decreased in MADRS score >50%, defined as response to treatment.

Conclusion: Analysis of data from this small sample suggests that females may have a higher rate of early response to low-dose ketamine infusion than men. This will need to be confirmed with a larger sample for statistical significance.

No conflict of interest for any of the authors.

Title: Perioperative administration of Emend® (aprepitant) at a tertiary care children's hospital: a 12-month survey

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Affiliations:

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3. Department of Anesthesiology & Pain Medicine, The Ohio State University College of Medicine, Columbus, Ohio

Key Words: Aprepitant, Postoperative Nausea and Vomiting, Pediatric

Objective: To review initial 12-month experience with Emend® (aprepitant) administration in a tertiary care children's hospital upon its introduction to the perioperative setting

The authors declare no conflict of interest.

Abstract

Introduction: Aprepitant (Emend®) is a novel antiemetic agent that works through antagonism of neurokinin-1 (NK-1) receptors. To date, there are limited data regarding its use to prevent postoperative nausea and vomiting (PONV) in children. We retrospectively reviewed our initial 12-months experience with aprepitant after it was made available for perioperative use.

Methods: The anesthetic records of patients who received aprepitant were retrospectively reviewed and demographic, surgical, and medication data retrieved.

Results: The study cohort included 31 patients (15 male and 16 female) ranging in age from 4 to 27 years (15.7 3 7.4 years) and in weight from 14.4 to 175.7 kilograms (59.3 3 30.2 kgs). Most of the patients (30 of 31) received the capsule form and 1 received the liquid. The average dose of aprepitant administered was 0.9 3 0.6 mg/kg; however, only one patient received dosing expressed as mg/kg, and the majority received a 40 mg capsule. All of the patients in the cohort had either a previous history of PONV or risk factors for PONV. PONV occurred in the PACU in 1 patient and during the first 24 postoperative hours in 3 additional patients. No adverse effects related to aprepitant use were noted.

Conclusions: Aprepitant was easily added to the preoperative regimen for pediatric patients who may require it. Our approach limited overuse and subsequent cost concerns. Future studies with a comparator group and a greater sample size are needed to demonstrate its efficacy, especially in comparison to time-honored agents such as ondansetron. No adverse effects were noted in our limited study cohort.

Researcher: Sunay Rastogi
Email: srastogi21@us.edu
Presentation Title: The Role of SerpinB3 in Glioblastoma Cancer Stem Cell Proliferation
Research Institute: Cleveland Clinic Lerner College of Medicine.
Presentation Type: Poster Presentation

GBM is the most common primary malignant brain tumor. Early detection of this tumor type remains challenging and median survival time of those affected remains around 14-16 months. Currently there is no cure for GBM, and radiation, surgery, and chemotherapy are used to try and combat this disease. GBM ranks #1 among all cancers in terms of average years of life lost. This poor prognosis can be partially attributed to the extremely high recurrence rate of the disease. GBM tumor cells are highly infiltrative and include subpopulations of cells with the capacity to self-renew and generate the cellular diversity present in the tumor. The actions of these cells, commonly referred to as Cancer Stem Cells or CSCs, are strongly associated with disease recurrence. This research is focused on improving the understanding of glioblastoma CSCs and developing therapies that specifically target these cells. Junction Adhesion Molecule A or JAM-A was initially identified as a cell junction protein that is responsible for maintaining thin tissue forming the outer layer of a body's surface and lining the alimentary canal and other hollow structures. Studies in the past have demonstrated that JAM-A is able to regulate both pro and anti-tumorigenic processes in cancer, and might be useful as a biomarker of malignant tumors. The majority of these studies provide evidence for JAM-A having an intrinsic, pro-tumorigenic role in regulating the CSC phenotype, cancer cell proliferation, and metastasis for multiple tumor types, in particular GBM. None of these studies, however, have focused specifically on the isolated role of JAM-A or its potential role in a larger signaling network for cancers. SerpinB3 was chosen for functional assessments due to its previously identified role in the tumorigenesis of hepatocellular carcinoma and limited known role in GBM. Endogenous JAM-A binding to SerpinB3 was confirmed through immunoprecipitation of SerpinB3 that demonstrated JAM-A binding. To investigate the CSC-specific role of SerpinB3, SB3 will be knocked down in a human GBM xenograft model (T4121) utilizing two non-overlapping short-hairpin RNA constructs. The GBM CSCs will be orthopedically inserted into the mice via an intracranial injection. This study will have a threefold outcome, provide the identity of a novel binding domain within junctional adhesion molecules; identify an interaction that can be specifically targeted with drugs to fight against an otherwise therapeutically resistant cell population; and clarify the role SB3 plays in GBM CSCs specifically

ASSOCIATION OF INDIAN PHYSICIANS OF NORTHERN OHIO DISTINGUISHED PHYSICIAN OF THE YEAR CRITERIA

For distinguished physician award recipient to be recognized at AIPNO's Annual dinner, the nominee:

- Shall be member of AIPNO in good standing.
- He/She shall not be member of Awards and Recognition Committee for that year.
- He/She shall not be directly related to Awards and Recognition Committee for that year.
- Direct relation being spouse, sister, brother, son, daughter, parent.
- If selected He/She shall be available to receive award in person.
- The nominees shall be evaluated by point system by Awards and Recognition Committee.
- The decision of Awards and Recognition Committee will be considered final. All records of evaluation will be filed in AIPNO office.

Following point system will be used to evaluate the nominees. The physician with highest score shall be a recipient of award.

1. **Service to AIPNO** - (30 Points)
   Includes positions held, physician's effectiveness of role in AIPNO.
2. **Academician**
   Academic Achievement
   Highest rank achieved (10 points)
   Publications- Peer reviewed (5 points)
   Not reviewed by peers including books, journals, editorials, articles
3. **Private Practitioner**
   Academic Achievement
   Highest rank achieved (15 points)
4. **Service to other community associations** - (20 points)
   e.g. AAPI, FICA, community organizations. Includes positions held, physician's effectiveness of role in these organizations.
5. **Philanthropy** - (15 points)
   Donation in funds
   Donation of personal time
6. **Medical practice** - (10 points)
   Years in practice
   Quality of practice.
7. **Non-academic achievement** - (10 points)

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ASSOCIATION OF INDIAN PHYSICIANS OF NORTHERN OHIO MEDICAL STUDENT SCHOLARSHIP AWARD CRITERIA

For student scholarship award of $1000.00 the nominee:

Final year medical student with place of residence or medical school being Northeast Ohio.

If selected He/She shall be available to receive award in person.

The nominees shall be evaluated by point system by Awards and Recognition Committee.

The decision of Awards and Recognition Committee will be considered final. All records of evaluation will be filed in AIPNO office.

Following point system will be used to evaluate the nominees. The medical student with highest score shall be a recipient of award.

Academic merit - (50 points)
GPA, SAT, MCAT, USMLE-I
Publications, research

Extra curricular achievements - (25 points)
Sports, music, drama, other hobbies and talents

Community service - (25 points)

PAST PRESIDENTS

1984	Shashin Shah, M.D.
1985	K.V. Gopalkrishna, M.D.
1986	Arvind Shah, M.D.
1987	Vinoo Mankad, M.D.
1988	Parshotam Gupta, M.D.
1989	H. Sundaresh, M.D.
1990	Atul Mehta, M.D.
1991	Raja Shekar, M.D.
1992	Mohan Durve, M.D.
1993	Satish Kalhan, M.D.
1994	Chandra Haria, M.D.
1995	Ashok Patil, M.D.
1996	Sudhir Mehta, M.D.
1997	L.C. Roa, M.D.
1998	Vasu Pandrangi, M.D.
1999	Girish Mulgaokar, M.D.
2000	Anjali Ambekar, M.D.
2001	Ajit Shah, M.D.
2002	Sanjay Parikh, M.D.
2003	Saroj Pagedar, M.D.
2004	Shailesh Nanavati, M.D.
2005	Saroj Mahalaha, M.D.
2006	Arun Gupta, M.D.
2007	Sagarika Nayak, M.D.
2008	Sangita Mehta, M.D.
2009	Satish Mahna, M.D.
2010	Geeta Gupta, M.D.
2011	Sandhia Varyani, M.D.
2012	Elumalai Appachi, M.D.
2013	Beejadi Mukunda, M.D.
2014	Ranjit Tamaskar, M.D.
2015	Umesh Yalavarthy, M.D.
2016	Ravi Krishnan, M.D.
2017	Hari Balaji, MD
2018	Mona Gupta, MD

PAST DISTINGUISHED PHYSICIANS OF THE YEAR

1989	Satish Kalhan, M.D.
1990	Sharad Deodhar, M.D.
1991	Gita Gidwani, M.D.
1992	Elizabeth K. Balraj, M.D.
1993	Atul C. Mehta, M.D.
1994	Raja Shekar, M.D.
1995	Mohan Bafna, M.D.
1996	Mohan Durve, M.D.
1997	K.V. Gopalkrishna, M.D.
1998	H. Sundaresh, M.D.
1999	Lilian Gonsalves-Ebrahim, M.D.
2000	Laxminarayana C. Rao, M.D.
2001	Chandravadan Haria, M.D.
2002	Sudhir Ken Mehta, M.D.
2003	Arvindkumar Shah, M.D.
2004	Ajit C. Shah, M.D.
2005	Prasanta K. Raj, M.D.
2006	Vasu Pandrangi, M.D.
2007	Sanjay Parikh, M.D.
2008	Darshan Mahajan, M.D.
2009	Ashok Patil, M.D.
2010	Nandlal Varyani, M.D.
2011	Arun Gupta, M.D.
2012	Girish Mulgaokar, M.D.
2013	Shaila Sundaresh, M.D.
2014	Sangita Mehta, M.D.
2015	Beejadi Mukunda, M.D.
2016	Neil Mehta, M.D.
2017	Jaya Shah, MD
2018	Umesh Yalavarthy, MD

PAST MEDICAL STUDENT SCHOLARSHIP RECIPIENTS

1997	Nand Kamath
1998	Geetha Mohla
	Ashish Bhatia
1999	Sarita Shah
	Sunita Kuar Saini
2000	Ashok Rajappa Asthagiri
	Prashant Tamaskar
2001	Sunil M. Patel
2002	Sumit Bapna
	Falguni Patel
2003	Kris Rajan Jatana
2004	Manish D. Shah
2005	Asghar Ali Fakhri
2006	Saba Mubarka Ali
2007	Malin Anand
2008	Seehtaram Chadalvada
2009	Priya Malik
2010	Rueben Nair
2011	Shishir Sharma
2012	Preethi Mani
2013	Pooja Shah
2014	Mihir Shah
2015	Amar Shah
2016	Madhulika Eluri
2017	Akshay Sharma
2018	Abhinay Ramachandran
	Shree Agrawal

ARTICLES OF INCORPORATION
ASSOCIATION OF INDIAN PHYSICIANS OF NORTHERN OHIO, INC.

The undersigned, a majority of whom are citizens of the United States, desiring to form a corporation not for profit under Ohio Revised Code, Section 1702.01, et. seq., So hereby certify:

Article 1- **NAME**

The name of the corporation shall be the Association of Indian Physicians of Northern Ohio, herein referred to as the Corporation.

Article 2 - PLACE

The place in the State of Ohio where the principal office of said corporation shall be located in the County of Cuyahoga.

Article 3 - NONPROFIT

The Corporation is a nonprofit corporation as described in section 1702.01 of the Ohio Revised Code. The Corporation is not organized for the pecuniary profit of its Trustees, Officers or Members. The Corporation shall not declare nor distribute a dividend, and no part of its net earnings shall inure, directly or indirectly, to the benefit of any Trustee, Officer or Members, but the Corporation shall be entitled to make payments authorized under Article 7 Limitation and any balance of money or assets remaining after the full payment of Corporate obligations of all and any kind shall be solely devoted to the educational and benevolent purposes of the Corporation.

Article 4 - DURATION

The duration of the Corporation is perpetual.

Article 5 - PURPOSES

A. The Corporation is organized for educational and charitable purposes.
B. To bring together the physicians of Indian origin practicing in Northern Ohio in one organization, and to enhance their knowledge and mutual understanding.
C. To assist medical students and physicians to obtain medical training in the United States.
D. To conduct educational programs to acquaint the members with clinical, scientific and other developments in the field of medicine.
E. To render medical services to indigent people in the community.
F. To provide a vehicle for members to contribute to medical care and medical education in India.
G. To provide mutual understanding and cooperation between members of this Corporation and other local and national organizations of mutual interest in the United States and India.

Article 6 - POWERS

Solely for the forgoing purposes, the Corporation shall have the following powers:

1) To publicize and promote the purposes of Corporation to all members of the Corporation and to the public;
2) To exercise all rights and powers conferred by the laws of the state of Ohio upon nonprofit corporations; and
3) To do such other things as are incidental to the purposes of the Corporation or necessary or desirable in order to accomplish such purposes.

Article 7 • LIMITATION

No part of the net earnings of Corporation shall inure to the benefit of or be distributed to its Members, Officers, or Trustees, but the Corporation shall be authorized and empowered to pay reasonable compensation for services rendered and to make payments and distributions in furtherance of the Purposes as set forth in Article 5, Purposes.

Article 8 - TAX EXEMPT

It is intended that the Corporation shall have the status of a corporation that is exempt from federal income taxation under Section 501(a) of the Internal Revenue Code of 1986, as amended, (the Code), and an organization described in Section 501 (c)(3) of the Code. These Articles shall be construed accordingly, and all powers and activities of the Corporation shall be limited accordingly.

Article 9 - DISSOLUTION

Upon the dissolution of the Corporation, the Board of Trustees shall, after paying or making provision for the payment of all the liabilities of the Corporation, dispose of all the assets of the Corporation exclusively for the purpose of the Corporation, in such a manner, or to such organizations organized exclusively for charitable, religious, cultural or scientific purposes as shall at the time qualify as an exempt organization or organizations under Section 501(c)(3) of the Internal Revenue Code of 1954 or the corresponding provision of any future United States Internal Revenue Law. Any of such assets not so disposed of shall be disposed of by the court of appropriate jurisdiction of the county of which the principle office of the Corporation is then located, exclusively for such purposes or to such organization or organizations as said court shall determine to be organized and operated exclusively for such purposes.

Article 10 • MEMBERS

There shall be three categories of members, voting, associate and honorary.

Article 11 - QUORUM

The quorum for any meeting of the Executive Committee or Board of Trustees shall consist of a simple majority.

Article 12 - OFFICERS

The Corporation shall have a President, President-Elect, Secretary and Treasurer and Immediate Past President. Each officer shall be elected as set forth in the Code of Regulations.

Article 13 - EXECUTIVE COMMITTEE

The Executive Committee shall be composed of the President, President-elect, Secretary, Treasurer, Immediate Past President and ten members at large. Each at large member shall be elected as set forth in the Regulations.

Article 14 - TRUSTEES

The number of Trustees may be increased or decreased from time to time in accordance with the regulations, but shall never be less than three. The Trustees shall be elected as set forth in the Regulations.

Article 15 - NON-STOCK BASIS

This corporation is formed on a non- stock basis and shall not issue shares of stock.

Article 16 - AMENDMENTS

SECTION I

These Articles of Incorporation and the Code of Regulations, or any articles or sections or any part thereof may be amended, repealed or new by-laws adopted by the affirmative vote of two-thirds of those members entitled to vote at a meeting duly called and held for that purpose. The quorum for such a meeting shall be 20% or 40 members, whichever is the larger number of members entitled to vote.

SECTION 2

Any amendment may be proposed by resolution adopted by the Executive Committee or by at least 20 active members of the Corporation. Said such proposed amendments shall then be submitted by the Executive Committee to the entire membership entitled to vote, at least 45 days prior to calling a meeting for the purpose of amending these Articles.

Article 17 PARLIAMENTARY AUTHORITY

Officers, Trustees and Members shall guide conduct business of the Foundation using Robert's Rules of Order, unless otherwise specified in these Articles or Code of Regulations.

Article 18 - INDEMNIFICATION

The Corporation shall indemnify each Trustee and Officer of the Corporation to the fullest extent permitted by the law.

CODE OF REGULATIONS
ASSOCIATION OF INDIAN PHYSICIANS OF NORTHERN OHIO, INC.
AN OHIO NONPROFIT CORPORATION

Article 1- CODE OF REGULATIONS

These regulations constitute the Code of Regulations adopted by the Corporation for the regulation and management of its affairs.

Article 2 - PURPOSES

This Corporation is organized and shall be operated for the purposes set forth in the Corporation's Articles of Incorporation.

Article 3 - POWERS

Solely for the foregoing purposes, the corporation shall have the powers set forth in the Corporation's Articles of Incorporation.

Article 4 - MEMBERSHIP

SECTION 1 - Voting Members

Active membership is open to all physicians of Indian origin who are practicing medicine or are retired in Northern Ohio who maintain high moral, ethical, and professional standards. They shall have the right to vote and are eligible to hold office; Active members may become Life Members by paying the dues for lifetime membership. The dues for life membership will be determined by the Board of Trustees. The Corporation shall have voting members (Active) who shall have all rights and privileges of members of the Corporation.

SECTION 2 - **Associate Members**

Physicians in training, dentists, medical scientists and medical students of Indian origin residing in Northern Ohio. They shall have the right to vote but are not eligible to hold office.

SECTION 3 – **Honorary Members**

Honorary membership may be conferred by the Board of Trustees upon physicians and spouses of deceased members, who have shown outstanding achievements and special interest in this Corporation. Honorary members will not be eligible to hold office.

Article 5 - DUES

Active and Associate members shall pay annual dues which shall be determined and reviewed as needed by the Executive Committee. Honorary members are not required to pay dues. The fiscal year shall be from January 1 through December 31. Annual dues shall be due and payable on or before January 1 of each year. If the dues or any part thereof remain unpaid after March 15 of any year, a note of delinquency will be sent. After June 1, if the dues remain unpaid, the membership and all its rights and privileges may be suspended until such dues are paid in full.

Article 6 - ADMINISTRATION AND OFFICERS

The governance of the Corporation shall be vested in the Executive Committee and Board of Trustees.

Article 7 - BOARD 0f TRUSTEES

SECTION 1

The Board of Trustees will have the ultimate authority for ensuring its fiscal welfare and financial stability; however, it will not interfere with the regular operation of the Corporation.

SECTION 2

In case of crisis, at the request of the Executive Committee, the Board will act as the mediator to resolve the dispute. The decisions of the Board of Trustees in these disputes will be binding.

SECTION 3

The Board of Trustees will be the custodian of all the assets of the Corporation and will make all decisions regarding disbursement of the funds in case of dissolution of the Corporation.

SECTION 4

The Board of Trustees will consist of nine members each being elected by the eligible voting membership. At least five Trustees of the Board will be from amongst the past presidents of the Corporation.

SECTION 5

The term of the trustees will be straddled.

SECTION 6

The term of the trustees will be limited to three years.

SECTION 7

Members of the Board of Trustees will not be members of the Executive Committee.

SECTION 8

A Chairperson of the Board will be elected by the Board amongst its members. The term of the Chairperson shall be limited to a maximum of two years. The Chairperson shall be ex-officio, nonvoting member of the Executive Committee and a voting member of the Finance Committee.

SECTION 9

The Board will act as the Trustee of the Endowment Fund of the Corporation. It will be responsible for long range planning, for constitutional and legal matters, and for safeguarding the tangible assets of the Corporation. The Board of Trustees is specifically required to pre-approve any expenditure item of more than $5,000.

SECTION 10

The Board will meet at least once a year. A record of the minutes of the meeting will be maintained. The President of the Corporation will attend the meetings of the Board as an ex-officio, non-voting member. Quorum consists of members attending duly convened meeting, except for pre-approval of expenditure items of more than $5,000 for which minimal of 5 affirmative votes are needed for passage of the item.

Article 8 - COMMITTEES

SECTION 1

The following shall be the Standing Committees of the Corporation. The chairpersons of these committees, with the exception of the Executive Committee, shall be appointed by the President and chosen from among the members of the Executive Committee. The remaining members of the committees may be selected from the voting and honorary membership.

1. Executive
2. By-Laws Committee
3. Membership
4. Finance
5. Medical Education and Research
6. Nominations and Elections
7. Publications and Public Relations
8. Awards and Recognition Committee
9. Endowment Fund Committee

SECTION 2

The Executive Committee shall be composed of the President, President-Elect, Secretary, Treasurer and the Immediate Past President and ten members-at-large.

SECTION 3

The Chairperson of the Special Programs and Entertainment shall be selected from the General Membership or their spouses.

SECTION 4

Nominations and Election Committee: The Nominations and Election Committee will consist of the President, the President-Elect, the Immediate Past President, one member of the Board of Trustees and one previous president. It will be chaired by the Immediate Past President.

SECTION 5

Endowment Fund Committee: This committee will consist of at least five members, two of whom will be from the Board of Trustees. The committee will be responsible for raising funds for charitable causes, and will make recommendations to the Executive Committee.

SECTION 6 – The Finance Committee shall be comprised of Chairman of the Board of Trustees, President, President-Elect, Treasurer, Past President, and 2 Members-at-Large (volunteers or elected by the Executive Committee.)

Article 9 - TERMS OF OFFICE

SECTION 1

The terms of office of the President, President-Elect and Secretary shall he for a period of one year. The term of Treasurer shall be for two years. The President may serve once only. Other officers and trustees may be re-elected.

SECTION 2

Terms of office of the members at large shall be for two years. Five members-at-large shall be elected during odd years and the other five members-at-large shall be elected during even years.

SECTION 3

In the event a member of the Executive Committee is unable to complete his/her term, a replacement will be appointed upon recommendation from the President with the approval of the Executive Committee, to complete the remaining elected term of the vacating member.

SECTION 4

In the event the office of President is vacated, the succession shall be by the President-Elect, Secretary, and Treasurer, in that order.

Article 10 - ELECTIONS

SECTION 1

Elections shall be held each year four weeks prior to the annual meeting of the general membership in the month of November or December.

SECTION 2

The Nominations and Elections Committee shall conduct the elections.

SECTION 3

Elections to all offices shall be by secret ballot. Candidates shall have the right to send their representatives to witness the counting of the ballot.

SECTION 4

The Nominations and Elections Committee shall invite nominations for various offices and trustees from the general membership by mailing the forms for nominations. The completed nomination paper, which should have the signature of the candidate signifying his/her consent, should be received by the deadline set by the Chairperson of the Nominations and Elections Committee. Applicants with incomplete or incorrect nomination forms will be given at least one week notice to correct the form prior to the nomination deadline. The Committee will submit the entire slate of candidates for vote to the eligible general membership by mail.

SECTION 5

Members of the Nominations and Elections Committee may not nominate themselves for office. They may not contest any elected position in the organization. If there is an insufficient number of nominees the Committee can submit nominations with the approval of the nominee.

Article 11- DUTIES OF OFFICERS

SECTION 1- Executive Committee

A. The Executive Committee shall have the duties and powers as ordinarily delegated to the governing board of a non-profit incorporated association. It shall govern and direct activities of the Corporation as described in this Code.
B. It shall fill any vacancies of the office of President-Elect, Secretary, and Treasurer and members of the Executive Committee by appointment in accordance with the provisions set forth in this Code.
C. It shall appoint all standing committees and direct their activities.
D. The Executive Committee shall determine the dues of the Corporation and review the dues as necessary.
E. It may remove by two-thirds vote any member from the rolls of the Corporation for conduct detrimental to the Corporation.
F. It may by two-thirds vote of its members present at the meeting that has been properly called, remove any member from any elected or appointed office. If the individual concerned is a member

F. cont'd: of the Executive Committee or Board of Trustee, he/she shall not vote on such motion

G. Any member, officer or trustee removed from the Corporation under Article 11, Section I, paragraph E and F may appeal such a decision by the Executive Committee and ask for vote by the Board of Trustees. They may be re-instated by the approval of two-thirds majority of the membership at the General Body Meeting.

SECTION 2. President

A. The President shall be the Chief Executive Officer of the Corporation and shall perform all other duties incident to the office of President and such other duties as may be designated by the Executive Committee or Board of Trustees.

B. He/She shall preside at all meetings of the Corporation and of the Executive Committee.

C. He/She shall make such appointments as authorized by Code, Executive Committee or Board of Trustees.

D. He/She shall designate all official delegates and representatives to other groups.

E. He/She shall appoint such Special and Ad Hoc Committees as may be necessary to further the Corporation's objectives and he/she may discontinue any such committee when its purpose has been served, in consultation with the Executive Committee or Board of Trustees.

F. The president is authorized to donate up to $5,000.00 to non-profit groups or events without prior approval of the Board of Trustees or Executive Committee.

SECTION 3 - President-Elect

A. The President-Elect shall perform the duties of the President in his/her absence.

B. The President-Elect may be assigned one or more special projects and is the Endowment Chair.

SECTION 4 - Secretary

The Secretary shall keep the minutes of the meetings of the Corporation, the Executive Committee and Board of Trustees, and perform all duties assigned to him/her by the President, Executive Committee or B.O.T.

SECTION 5 - Treasurer

A. The Treasurer shall receive and be the custodian of the funds of the Corporation, and will chair the Finance Committee.

B. He/She shall present to the Board of Trustees a proposed budget for the ensuing fiscal year and this budget in the final form shall be approved by the Board of Trustees prior to the beginning of the fiscal year. Any single expenditure item of more than $5,000 should be pre-approved by the Board of Trustees.

C. He/She shall make a complete financial report at the annual business meeting of the Corporation. The financial report should be audited by a C.P.A.

D. Life membership dues will be placed in a separate income bearing account. Finance committee is authorized to spend up to 100% of the income for operating expenses.

E. Endowment Fund: The Corporation will establish an Endowment Fund distinct from other finances. Endowment fund will be maintained by a 3rd party administrator. Fifteen percent of the gross revenues for Endowment fund-raising events will go toward administrative costs. Up to 4% of the market value of the Endowment fund, averaged over previous 3 years, may be distributed annually for Charity and operating expenses, while continuing the growth of the corpus. Fifty percent (2% of the market value) of the distribution of the funds will be used for charitable giving, including a $1,000.00 medical student scholarship and fifty percent (2% of the market value) of the distribution may be used for operating expenses of the corporation. The scholarship selection will fall under the Awards & Recognition Committee

F. Funds may be added to the Endowment Fund by donations or by fund-raising events. After paying for the expenses and contribution to the charitable cause (for which the fund-raising event was held), the moneys generated from the fund-raising activity will be added to the AIPNO Endowment Fund. All unidentifiable charitable contributions to the Corporation will be deposited in the Endowment Fund account.

Article 12 - **MEETINGS**

SECTION 1

There shall be at least one meeting of the entire membership each year at a place and date designated by the Executive Committee.

SECTION 2

The time and place of all meetings shall be decided by the Executive Committee. The notice of the time and place of all meetings, except those of the Executive Committee or Board of Trustees shall be mailed to all officers and members at least 45 days prior to such meetings. Special meetings may be called by the President, by majority of the Executive Committee or Board of Trustees, or by 10% or 25 members, whichever is the larger.

SECTION 3

The Executive Committee shall meet once a month or as needed to conduct its business.

SECTION 4

If a member of the Executive Committee fails to attend three consecutive meetings of the Executive Committee without a proper excuse, he/she may be dismissed from the Executive Committee by two-thirds of its members.

SECTION 5

The quorum for any meeting of the Executive Committee or Board of Trustees shall consist of a simple majority.

SECTION 6

Parliamentary Procedure - In the absence of any provision in the Code of the Corporation, Board of Trustees, Executive Committee, and all Committee Members shall be guided by the Parliamentary Rules as used and contained in the current edition of the Roberts "Rules of Order".

Article 13 - LIABILITY OF MEMBERS

No member of the Corporation shall be personally liable to the creditors of the Corporation for any liability or indebtedness, and any and all creditors shall look only to the assets of the Corporation.

Article 14 - **AMENDMENTS**

SECTION 1

This Code of Regulations, or any articles or sections or any part thereof may be amended, repealed or new Code adopted by the affirmative vote of two-thirds of those members entitled to vote at a meeting duly called and held for that purpose. The quorum for such a meeting shall be 20% or 40 members, whichever is the larger number of members entitled to vote.

Milestones 2011

2011

President: Sandhia Varyani, M.D.

20th Annual Chiraag Fundraiser:
Beneficiary: Marion Sterling Library Renovation Project of the Cleveland Metropolitan School District
Chair: Dr Appachi
Chief Guest: Anand Julka
Donation: $10,000.00 and Chiraag Continuing Medical Education Program

• Karaoke Night at Landerhaven, sponsored by Gregory Ochalek, CFP of AXA Advisors on March 18, 2011

• Japan Earthquake donation on April 5, 2011

• BAPS Health Fair, May 1, 2011

• By-Laws review & amendments

• Golf Outing Aug. 21, 2011 Avon Oaks Country Club

• Social Dinner at Saffron Patch, Sept. 15, 2011

• Annual Dinner
Chief Guest: Dr. Michael Nochomovitz
President, University Hospitals Physician Services

• Annual Continuing Medical Education, Nov. 5, 2011

• Acquisition of CPA firm - Dingus & Daga, Inc.

• Shiva Vishnu Temple Health Fair, Sept. 18, 2011

• Bonding of Officers and Board of Trustees.

• Contribution to Project SEVA

• Contributions to Philanthropia

• YATRA Medical Camps in Rishikesh, India

Milestones 2012

2012

President: Elumalai Appachi, MD

- Humanitarian Services Committee, Medical Yatra mission to Gondal, & Ambaji, Guj (India)
  January 27 to Feb. 2, 2012
- Establish of Directors & Officers Insurance, March 2012
- Twenty-first Annual Chiraag Fundraising Dinner & CME program:

  Beneficiary: American Heart Association

  Chief Guest: David L. Bronson, MD, FACP, President of American College of Physicians

  Chair: Dr. Beejadi Mukunda

  Donation: $15,000.00
- Reinstatement of "The Pulse" on-line AIPNO magazine by Drs. Anupa & Milind Deogaonkar

- Karaoke Night at Bamboo Gardens, July 21, 2012
- Shiva Vishnu Temple & AIPNO Health Fair on September 16, 2012
- Golf Outing at Signature of Solon with Dinner at Saffron Patch on September 23, 2012
- Historic election with over 33% of eligible membership casting ballots.
- Annual Dinner 'Physicians Seminar' on November 10, 2012 at Ahuja Medical Center in Beachwood.
- AIPNO launches a new, updated website engineered by Dr. Anupa Deogaonkar.
- Annual Dinner & Dancing at "Lacentre Banquet Facility" on December 8, 2012.

  First induction of "Honorary Members" at the Annual Dinner.

- Seventh Annual New Year's Eve Gala - Executive Caterers of Landerhaven

Milestones 2013

2013

President: Beejadi Mukunda, M.D.

- FICA: Republic Day Celebrations, invited guest speaker
- American Heart Association: Sponsored the Power of Laughter Workshop and Comedy luncheon in June 2013
- Participation in Dinner Reception for Indian Ambassador to US, Honorable Ms. Nirupama Rao
- Participation in the Planning Committee of the first Global Impact Award by Cleveland Council of World Affairs to the Former Ambassador to India and Former Governor of Ohio, Richard Celeste
- 22nd Annual Fundraiser "Chiraag", first sold-out event in the history of AIPNO, with record amount of monies collected.

  Chairperson – Ranjit Tamaskar ,M.D.

  Beneficiary – Alzheimer's Association, Cleveland Area Chapter, Hospice of Western Reserve, Food Bank of Cleveland

  Chief Guest – Chief Justice Maureen O'Connor, Supreme Court of Ohio
- CME at Lake West Hospital, facilitated by LakeHealth
- AIPNO Pulse and updating of AIPNO website
- Meeting with AAPI President Elect, Ravi Jahagirdar, MD, and requested hosting of Annual Conference of AAPI and Governing Body Meeting. Apprised of improvement in availability of convention facilities in Cleveland. Requested better representation of AIPNO at the national level in AAPI
- Efforts throughout the year to rejuvenate and resurrect AIPNO, improved communication with members and families, improved relationship between the Executive Committee and Board of Trustees.
- Efforts to change bylaws to improve operations of the organization.
- Idea of Legacy Gift and third party management of Endowment fund to provide perpetuity to the organization via an Ad-hoc committee chaired by Vasu Pandrangi, MD
- Karaoke Night, June 22nd at Bamboo Gardens
- Golf Outing at Signature of Solon Country Club, June 2nd
- Golf Outing at Hawthorne Valley Country Club, July 28
- Shiva Vishnu Temple Health Fair, September 15th
- BAPS Swaminaryan Temple Health Fair, September 29th
- Sponsorship of Downtown Cleveland Alzheimer's Walk, Oct. 13th
- 30th Annual Dinner with Research Showcase at Cleveland Convention Center & Global Center for Health Innovation, November 2, 2013

  Chief Guest – U.S. Senator Sherrod Brown
- Invitation and participation of majority of health care systems, nursing facilities, business leaders and media involvement.
- Research poster competition to showcase the research activities from Northern Ohio, to help network between researchers, physicians and nurse/nurse practitioners in training with practicing physicians with the vision to attract, recruit and retain talent in Northern Ohio
- Kala, Art exhibition and Sale
- General Body Meeting, December 15
- Encouragement to involvement of non-Indian physicians and healthcare workers with Medical Yatra
- Encouragement to start a Youth arm of Medical Yatra to encourage participation of younger families of AIPNO and their friends.
- Encouragement to Project Seva and changes in bylaws to help facilitate reinstatement of support to Project Seva

Milestones 2014

2014

President, Ranjit Tamaskar, M.D.

- FICA: Supported and participated in Republic Day Celebration
- 23rd Annual Fundraiser Chiraag
  Chairperson – Dr. Umesh Yalavarthy
  Chief Guest – Dr. Kris Ramprasad, President, State Medical Board, OH
  Beneficiary – Kidney Foundation $21,000, Dyslexia Association 3,000, Shiksha Daan $3,000
- CME at Lake West Hospital, facilitated by Lake Health System
- Picnic at Metro Park, organized by Dr. Umesh Yalavarthy
- Two Golf Outings at Signature of Solon, organized by Dr. Arun Gupta and Dr. H. P. Sundaresh
- Karaoke Night, Bamboo Garden, organized by Dr. Parag. Kanvinde
- Health Fair at Shiva Vishnu Temple, organized by Dr. Lal Arora
  Chief Guest – Dr. David Perse
- New partnership with Cleveland Foundation to manage AIPNO Endowment Fund
- Legacy Gift for Cleveland Sight Center: More than 7000 preschool children will be screened for vision every year for next five years.
- Sponsored "White Cane Walk" a fundraising event for Cleveland Sight Center
- Medical Yatra, Sponsored one Medical Resident to India, both AIPNO and non AIPNO members provided medical care in Rural India
- 31st Annual Dinner and Second Research Showcase at Cleveland Convention Center
  Chief Guest – Mr. Sam Pitroda
- Organized and hosted APPI Governing Body Meeting at Cleveland Convention Center
- Membership drive that resulted in more new life members to the organization and participation of physicians in training in AIPNO activities
- General Body Meeting on December 13th at Ahuja Hospital
- Ninth annual New Year's Eve Gala, Dr. Umesh Yalavarthy and Dr. Arun Gupta
- Participated in meetings that led to the partnership of "Helping Hands" and SEVA International to create a social network of volunteers to help the community
- Represented AIPNO at Cleveland City Hall for Asian Heritage Day

Distinction:
Dr. Anupa Deogaonkar was awarded "Bharat Gaurav"
Dr. Beejadi Mukunda, Chief of Staff Elect and Director of Medicine, Hillcrest Hospital
Dr. Rajesh Sharma, Chief of Staff, Lutheran Hospital
Dr. Sandhia Varyani, Chair Robotic Surgery Committee, UH
Dr. Praveer Kumar, Chief of Medicine, Bedford Hospital

Milestones 2015

2015

President, Umesh Yalavarthy, M.D.

- **FICA:** Supported and participated in Republic Day Celebration, January 24
- Supported Annual **Medical Yatra** trip to Mysore/Bangalore, India, January 1828
- 24th Annual Endowment Fundraiser, **Chiraag**, April 25
  Chairperson: Ravi Krishnan, M.D.
  Chief Guest: Sister Judith Ann Karam CSA, FACHE of SVCH
  Beneficiary: Minds Matter, Cleveland Chapter, $16,000.00, Ride for World Health, $500.00
- **CME Symposium** at Lake Hospital, facilitated by Lake Health System
- Supported Shiva Vishnu Temple **Health Fair** on May 17
- Summer **Golf Outings** on June 7 and August 9 at Signature of Solon Country Club, chaired by H.P. Sundaresh, M.D. and Arun Gupta, M.D.
- Chaired **AIPNO Family** Picnic on August 22 at Brecksville Reservation
- Karaoke night at bamboo gardens on September 12
- Legacy gift beneficiary, sight center, Donation: $20,000
- Met with Bill Spiker, Director of Development for Cleveland Sight Center to facilitate coordination between AIPNO and sight center
- Attended Cleveland Sight Center's annual gala, Spellbound, September 26
- Supported **BAPS Health Fair** on October 4.
- **AIPNO 32nd Annual Dinner, Annual Report, 3rd Research Showcase and 1st Annual Huron, Hillcrest and Southpointe Alumni Dinner** on October 24 at the Global Center for Health Innovation.
  Chief Guest and Key Note Speaker: Jeffrey Susman, M.D., Dean, College of Medicine, NEOMED
- General Body meeting on November 28

Distinctions:

- **Dr. Beejadi Mukunda:** Chief of Staff, Hillcrest hospital
- **Dr. Umesh Yalavarthy:** "Physician Collaboration Excellence award," University Hospitals, Geauga medical center
- **Dr. Mohan Durve:** "PRAVASI RATTAN AWARD,"from NRI Welfare Society of India
- **Dr. Mohan Durve:** "THE MOST DISTINGUISHED SERVICE AWARD", American Association of Physicians of Indian Origin (AAPI)
- **Dr. Mona Gupta:** Co-chair palliative care for Indo American Cancer Association
- **Dr. Mona Gupta:** Vice-chair for the Visionary Executive Leadership Team of Elite Women Around the World

Milestones 2016

2016

President, Ravi Krishnan, M.D.

- **FICA:** Supported and participated in Republic Day Celebration, January 23
- Supported Annual **Medical Yatra** trip to Dharampur & Guj, Jan 18 to Jan 28
- 25th Annual Endowment Fundraiser, **Chiraag**, April 9

  Chairperson: Harigopal Balaji, M.D.

  Chief Guest: Scott Hamilton, Olympic Gold Medalist

  Beneficiary: Scott Hamilton CARES Foundation

  CME Symposium at Lake Hospital, facilitated by Lake Health System
- Supported Shiva Vishnu Temple **Health Fair** on May 15
- Fall **Golf Outing** on September 18 at Signature of Solon Country Club, chaired by H.P. Sundaresh, M.D. and Arun Gupta, M.D.
- Legacy gift beneficiary, sight center, Donation :$20,000
- Attended Cleveland Sight Center's annual gala, Spellbound, September 24
- Supported **BAPS Health Fair** on October 2.
- **AIPNO 33nd Annual Dinner, Annual Report, 4th Research Showcase and 2nd Annual Huron, Hillcrest and Southpointe Alumni Dinner** on October 22 at the Global Center for Health Innovation.

  Chief Guest: Campy Russell, Cavaliers Director of Alumni Relations and FOX Sports Analyst for "Cavaliers Live" Pre & Post Game Show

  Key Note Speaker: Harry Boomer, Anchor/Reporter Cleveland 19 News

Milestones 2017

2017

President, Hari Balaji, M.D.

- Supported Annual **Medical Yatra** trip to Bhopal, MP, January of 2017
- Held a "Karaoke Night" at Holiday Inn on April 22, Dr. Rupesh Raina,CME speaker.
- Medical Yatra Recognized by Million Dollar Roundtable
- Supported Shiva Vishnu Temple **Health Fair** on May 21
- Supported **Golf Outings** on June 25 and September 10 at Signature of Solon Country Club, chaired by H.P. Sundaresh, M.D. and Arun Gupta, M.D.
- Legacy gift beneficiary, sight center, Donation :$20,000
- "Yoga in Medicine" a introduction to Yoga CME conducted in association with SEVA and Metro Health.
- Attended Cleveland Sight Center's annual gala, Spellbound, September 15
- **AIPNO 34nd Annual Dinner, Annual Report, 5th Research Showcase, 26th Chiraag and 3rd Annual Huron, Hillcrest and Southpointe Alumni Dinner** on September 23 at the Global Center for Health Innovation.

  Chief Guest – Diane Wish, CEO at Centers for Dialysis Care
- New Website @ www.AIPNO.org enhancing user friendly features.

Milestones 2018

2018

President, Mona Gupta, M.D.

- Initiated AIPNO support to "Visa, Passport and Consular Services Day" in collaboration with TANA (Telugu Association of North America) and FICA (Federation of India Community Associations of Northeast Ohio), January 20
- Supported and participated in FICA republic day celebration, January 20
- Combined EC/ BOT meeting and ratification of nomination committee appointments, January 21
- Bylaws review and clarification of Board and Officers selection, January 21
- Supported Medical Yatra trip to Gujrat/Banglore, India and Jaipur gift of artificial limb appreciated by Lions Club and community, January 11-18 and 19-25
- Global Grant to Women's Clinic-Medical Yatra, February
- Meeting with Cleveland Foundation to review AIPNO endowment fund management and year-end financial information, February 15
- Initiated new endeavor for AIPNO by supporting local and national dance talent and sponsored "Naach Di Cleveland" dance competition from across the country hosted by CWRU teams at Playhouse Square, February 17
- Initiated a new endeavor for AIPNO " Amit Tandon- live in Cleveland" show. Provided special discount for AIPNO members, March 9
- Initiated a new tradition for AIPNO - Community collaboration in Cleveland- Holi Ke Rang Apno Ke Sang:joint venture in collaboration with other organizations-ICAGA (Indian Community Associations of Greater Akron) and Marwari Association of Ohio (MAOH), March 18
- Invited Chief guest at BAPS " Shri Swaminarayan Jayanti and Shri Ram Navami" celebration, April 8
- First ever Bollywood show in history of AIPNO –fundraiser "Mystic India" attended by an audience of 1500. Beneficiary: Benjamin Rose Institute on Aging. Huge marketing for AIPNO via media, local grocery stores, collaboration with local organizations, social media, online newspaper, e-blasts, electronic marketing, local distribution, electronic and postal mails, April 14
- Media involvement both television and newspaper to promote "Mystic India"
- Supported Cleveland International Hall of fame to recognize Inductee Dr. Atul Mehta-AIPNO member and past president. April 17
- Cleveland International hall of Fame inductions ceremony sponsored and promoted our annual dinner. April 17
- Presented check to our Chiraag Beneficiary 2017- Recovery Resources at their Annual Gala from April 18
- First time project for AIPNO- Sponsored NEOMM - Northeast Ohio Maratha Mandal fundraiser show to promote AIPNO fundraiser "Mystic India" show, April 27
- Invited Guest at Shiva Vishnu Temple Health Fair organized by Dr. Gopal Kapoor, May 18
- Golf outing at Signature of Solon Country Club, chaired by Dr. Arun Gupta, June 18
- Meeting with AAPI president Dr. Gautam Samadder, and chairman of the board of trustees, Dr. Mohan Kothari and requested hosting of governing AAPI board meeting in Cleveland, July 3
- First time project for AIPNO- Sponsored India food fair, St George's Church, and marketed our annual fundraiser dinner, July 18

Milestones 2018

2018 continued

- Supported FICA Independence day celebration and represented AIPNO, August 18
- Sponsored Shiksha Daan Volunteer Appreciation Luncheon at Shiva Vishnu Temple, September 8
- First time endeavor-Sponsored India fest USA, participated in awards ceremony and promoted our annual fundraiser dinner, September 15
- Invited as Lead Guest at the inauguration ceremony of BAPS Charities Health Fair at BAPS Temple, September 23
- Invited to attend Cleveland Sight Center "Spellbound" Dinner & Fundraiser, September 28
- First time initiative- Sponsored Annual Fundraiser for "Save A Child" program to help the orphan and poor children in India, October 5
- CME at South Pointe Hospital facilitated by American College of Family Physicians October 6
- 35th Annual Dinner, Fundraiser and RSC at a new venue - Public Auditorium, October 6

  Chief Guest: Todd Park, Chair Devoted Health

  Keynote speaker - Rohit Khanna US Rep California

  Beneficiary - Mayor Jackson Scholarship Program administered through "College Now"
- Invitation and participation by major health systems, nursing facilities, business leaders, and media involvement
- Plan to attend and present check to AIPNO Mystic India Beneficiary- Benjamin Rose Institute on Aging at their Annual Gala, November 8
- General body meeting, December 9
- Quarterly Executive Committee meetings- Jan 21, April 3, June 19
- Legacy gift beneficiary, Cleveland Sight center, donation $20,000
- Ongoing efforts throughout the year to reinvigorate and revitalize AIPNO improve communication between members and families; improve relationship between the membership, executive committee, and the board of trustees
- Increased social media presence recognizing AIPNO events and marketing our sponsors.
- Ongoing efforts throughout the year for updating AIPNO website making it more user friendly to market AIPNO events.
- Membership drive that resulted in more new life members to the organization and participation of physicians in training with AIPNO activities.
- New public platform to AIPNO by collaboration with local organization, Mystic India Bollywood show and extensive marketing via social media, TV media, newspapers, online, newsletters, advertisements

Distinctions

Dr. Murthy Vuppala awarded Appreciation from Lions.

Dr. Atul Mehta inducted at the Cleveland International Hall of Fame

Dr. Ajit Kothari, Chairman Board Of trustees, American Association of Physicians of Indian Origin (AAPI)

Milestones 2019

2019

President: Harbhajan Parmar, MD

- Supported Medical Yatra trip to Gandevi in the western part of India, January
- Organized an AIPNO Picnic at Highland Heights park for all AIPNO members on June 9, supported by Corey Kimble of Merrill Lynch
- Supported the June 30 Golf Outing at Signature of Solon, organized by Dr. Arun Gupta
- Continued with support for the Annual Fundraiser for "Save A Child" program to help orphaned and poor children, July
- Initiated AIPNO's First Health Fair, coordinated with University Hospitals on August 24 at Willow Praise Church in Willowick, OH, offering consultation with 13 specialties, education, vaccines and testing
- CME at Regency Hospital on November 9
- 36th Annual Dinner, Fundraiser and RSC at Landerhaven, Mayfield Heights on November 9
  - ✓ Chief Guest: Melody J. Stewart, Justice of the Supreme Court of Ohio
  - ✓ Keynote speaker – Marc Byrnes, Chairman of Oswald Companies
  - ✓ Beneficiary- WomenSafe Inc. "The Green House", Chardon, OH
- Invitation and participation by major health systems, nursing facilities, business leaders, and media involvement
- General body meeting in December 2019
- Legacy gift beneficiary, Cleveland Sight Center, completed $100,000 commitment in March of 2019
- Supported the Board of Trustees in the selection of AIPNO's second Legacy Gift beginning 2020

Distinctions

Dr. Rupesh Raina: Most Distinguished YPS (Young Physician) Award of 2019 at the AAPI Annual meeting in Atlanta., GA on July 4, 2019.

Dr. Mona Gupta:

- Advanced to American Geriatric Society (AGS) Fellow status.
- Co-chair palliative care at American Geriatric Society and Indo-American Cancer Association
- Chair, Health and Wellness, IndiaFest USA

Dr. K.V. Gopalakrishna:

- Laureate Award by ACP Ohio Chapter on Oct. 17, 2019

Dr. Neil Mehta:

- Appointed Associate Dean for Curricular Affairs at Cleveland Clinic Lerner College of Medicine and Case Western Reserve University
- Jones Day Endowed Chair in Medical Education at Cleveland Clinic

Dr. Jaya and Mr. Ramesh Shah:

- Honored by the India Association of Greater Akron for 20 years of Humanitarian Services to the indigent rural population of India on Oct. 19, 2019

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970 E. Washington St. Ste 4D . . . . . Office: 330-722-5422
Medina, OH 44256
Hematology/Oncology

***Meyyazhagan, Swarnalatha MD**
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Geriatrics

* **Mistry, Darshan MD**
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Internal Medicine

* **Mistry, Niraj MD**
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Elyria, OH 44035
Internal Medicine

* **Mistry, Vijay MD**
6770 Mayfield Rd . . . . . Office: 440-442-2040
Mayfield Hts, OH 44124
Cardiology

* *Denotes Life Member*

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* **Mitra, Kunal MD**
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Cardiology

* **Mude, Jagdish L. MD**
1799 Kendal Dr. . . . . .Office: 440-740-1430
Broadview Hts., OH 44147
Psychiatry

* **Mukunda, Beejadi N. MD**
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Mayfield Village, OH 44143
Internal Medicine

* **Mulgaokar, Girish MD**
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Anesthesia

* **Murthy, Prabha MD**
Pathology - Retired

* **Murthy, P.S.S. MD**
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Forensic Pathology

Muthusamy, Preetha, MD
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Ashtabula, OH 44004
Neurology

* † **Nair, Daksha MD**

***Nair, Ravi, MD**
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Cleveland, OH 44195
Cardiovascular Med./Intervention

* **Nair, Siva S. MD**
Gastroenterology - Retired

* **Nanavati, Shailesh MD**
Pediatrics - Retired

* **Narichania, Dilip MD**
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Middleburg Hts., OH 44130
Surgery, General

* **Natesan, Arumugam MD**
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Cleveland, OH 44127
Gastroenterology

***Natesan, Corattur, MD**
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Richmond Hts. Medical Center, 44143
Internal Medicine

* **Nayak, Hemanta MD**
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Parma, OH 44130
Internal Medicine

* **Nayak, Sagarika MD**
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Westlake, OH 44145
Neurology

***Osman, Mohammed Najeeb MD**
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Cleveland, OH 44106
Cardiology

* **Oza, Sudhir MD**
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Cleveland, OH 44111
Internal Medicine

* **Padiyar, Aparna MD**
11100 Euclid Ave. . . . . Office: 216.844.4598
Cleveland, OH 44106
Nephrology

* **Pagedar, Saroj MD**
Pediatrics, Retired

* **Palekar, Sanjay MD**
Surgery, Orthopedic - Retired

* **Pallaki, Muralidhar MD**
10701 East Blvd . . . . . Office: 216-791-3800 x5260
Cleveland, OH 44106
Geriatrics

* **Panchagnula, Sastry MD**
Pulmonary Medicine - Retired

* **Pandit, Mukul MD**
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Cleveland, OH 44120
Internal Medicine

* **Pandit, Vidya MD**
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Avon Lake, OH 44012
Internal Medicine

* **Pandrangi, Vasu MD**
7225 Old Oak Blvd. #C212 . . . . . Office: 440-816-2725
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Surgery, Plastic

* **Pania, Vimla D. MD**
Internal Medicine - Retired

* **Pannu, Kulbir S. MD**
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N. Royalton, OH 44133
Nephrology

* **Parikh, Kamal MD**
OB/GYN

* **Parikh, Keyur MD**
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Mentor, OH 44060
Gastroenterology

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† *Deceased*

* **Parikh, Sanjay MD**
673 East River Street . . . . . Office: 440-323-6422
Elyria, OH 44035
Neurology, Pediatric

* **Parikh, Vibha MD**
OB/GYN, Retired

***Parmar, Harbhajan MD**
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Mayfield, OH 44143
Internal Medicine

***Parmar, Rajvinder, MD**
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Orange Village, OH
Internal Medicine

***Patel, Amit, MD**
6275 Old Oak Blvd. Suite C-11 . . . . Office: (440-403-9990)
Middleburg Hts., OH 44130
Nephrology

* **Patel, Ashwin MD**
Radiation Oncology - Retired

* **Patel, Bhupendra MD**
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Ashtabula, OH 44004
Radiology

* **Patel, Chandrakant MD**
One Perkins Square. . . . . Office: 330-543-8048
Akron, OH 44308
Pediatric Cardiology

***Patel, Chandralekha MD**
205 West 20th Street. . . . . Office: 440-233-1044
Lorain, Ohio 44052
Radiation Oncology

***Patel, Chetan MD**
7879 Auburn Rd. Suite 1A
Concord, OH 44077
Cardiology/Internal Medicine

* **Patel, Deodutt MD**
Radiology

* **Patel, Dhruv MD**
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Elyria, OH 44035
Neurology

* **Patel, Dineshchandra MD**
436 East River Street . . . . . Office: 440-323-8515
Elyria, OH 44035
Anesthesia

* **† Patel, Dinubhai MD**
Gastroenterology

* **Patel, Kirit MD**
Radiology

* **Patel, Mahendra MD**
Surgery, Orthopedic, Retired

***† Patel, Maheshkumar MD**
Occupational Medicine

* **Patel, Minal MD**
EMH, 630 E. River St. . . . . Office: 440-329-7620
Elyria, OH 44035
Pathology

Patel, Mita, MD
5054 Waterford Dr.. . . . . Office: 440-934-8344
Sheffield Village, OH 44035
Breast Surgical Oncology

* **Patel, Mohan MD**
Internal Medicine - Retired

* **Patel, Narendra MD**
Anesthesia

* **Patel, Tarulata MD**
1419 W. 9th St. 1st Floor . . . . . Office: 216-685-1653
Cleveland, OH 44113
Occupational Medicine

* **Patel, Urmila MD**
OB/GYN

* **Patel, Vasant**
Surgery, General

* **Patel, Vijaykant MD**
Emergency Medicine - Retired

* **† Patil, Ashok MD**
Occupational Medicine

* **Paul, Bobby MD**
3985 Warrensville Center Rd . . . . . Office: 216-283-4494
Cleveland, OH 44122
Internal Medicine

* **Paul, Randhir MD**
. . . . . Office: 440-960-3050
Emergency Medicine

***† Perumbeti, Prasad MD**
Anesthesia

* **Pillai, Latha MD**
22750 Rockside Rd Ste 100 . . . . . Office: 440-735-2832
Bedford, OH 44146
Internal Medicine

* **Pola, Laxshimaiya MD**
Gastroenterology - Retired

* **† Pradhan, Minal MD**
Anesthesia

* **Prithviraj, Panju MD**
615 Fulton Road. . . . . Office: 419-732-4028

** Denotes Life Member*

† Deceased

Port Clinton, OH 43452
Hematology/Oncology

*** Punjabi, Eshwar B. MD**
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Mentor, OH 44060
Internal Medicine

*** † Purohit, Umkant MD**
Orthopedic

Ragagopalan, Sudha MD
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Cleveland, OH 44195
Anesthesiology

Raina, Rupesh, MD
224 W. Exchange St. Suite 330 . . . . . Office: 330-436-3150
Akron, OH 44302
Nephrology

*** Raj, Chandra MD**
Anesthesia

*** Raj, Prasanta Kumar MD**
Retired
Surgery, General

*** Rajan, Semur MD**
Cardiology - Retired

***Raju, Rajeeva MD**
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Cleveland, OH 44106
Pathology

*** Rakhit, Ashis K. MD**
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Cardiology

Ram, Dasarathi MD
. . . . . Office: 440-526-8525
Radiology

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Anesthesia

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Anesthesia

***Ramana, C.V. MD**
Radiology

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Psychiatry

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Anesthesiology

***Rao, Akhilesh MD**
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Nephrology

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Psychiatry

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Pulmonary Medicine

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Willoughby, OH 44094
Internal Medicine

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Endocrinology, Diabetes

*** Rao, Shakuntala MD**
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Pediatrics

***Rao, Sheela M. MD**
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Pediatrics

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Vascular Surgery

*** Ravishankar, K.C. MD**
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Neurologist

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Anesthesia

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Internal Medicine

*** Reddy, S. Sethu MD**
Internal Medicine

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Psychiatry

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Pediatric/ICU

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Internal Medicine

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Nephrology

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Internal Medicine

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Neurosurgery

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Nephrology

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Family Practice

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Cardiothoracic Surgery

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Cardiology

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Neurology, Neurotology, Movement Disorders

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ENT

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Anesthesia

* **Shah, Jaya MD**
Pediatrics - Retired

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Physical Medicine & Rehabilitation

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Anesthesia

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Pediatrics

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Physical Therapy

* **Shah, Tushar MD**
Emergency Medicine

Shah, Vaishal, MD
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Sleep Medicine

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Neurology, Neurotology, Movement Disorders

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Radiation Oncology

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Internal Medicine

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Cardiology

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* **Shekar, Raja MD**
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Infectious Disease

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130 Jefferson St. #3A
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OB/GYN

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Internal Medicine

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Anesthesia

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Anesthesiology

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Ophthalmology

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Ophthalmology

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Internal Medicine

* **Singh, Kuldeep MD**
Emergency Medicine - Retired

* **Sitabkhan, Rayeka MD**
Pediatrics – Retired

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6770 Mayfield Rd. . . . . Office: 440-461-6430
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Urology

Sivaraman, Indu, MD
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Pediatric Neurology

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Cleveland, OH 44106
Anesthesia

* **Sogal, Ramesh MD**
Pain Management

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Internal Medicine

***Sreshta, Michael, RPh, MS. CDE**
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Director of Pharmacy/ Certified Diabetes Educator

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Neurology

†Sundaresh, H.P. MD
Pediatrics

***Sundaresh, Shailaja MD**
Retired
OB/GYN

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Nephrology

Suri, Anu, MD
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Avon, OH 44011
Pulmonology and Critical Care Medicine

* **Swamy, Kumar MD**
Allergy - Retired

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Pediatrics

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Oncology

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Anesthesia

***Tamaskar, Ranjit B. MD**
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Internal Medicine

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OB/GYN - Retired

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Pediatric Psychiatry

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OB/GYN - Retired

*** Thakore, Nimish MD**

*** Thakore, Yuan MD**

Tirounilacandin, Pazhaniaandi, MD
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ACMC, Family Medicine

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Internal Medicine

*** Udayashankar, S.V. MD**
Anesthesia - Retired

*** Ujla, Dilip MD**
Family Practice

*** Ujla, Rekha**
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Nurse Practitioner

*** Umapathy, Kandasamy MD**
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Internal Medicine

*** Vaidya, Vijaykumar MD**
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Surgery

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Cardiology

***Vallabhaneni, Rajani MD**
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Family Medicine

***Varma, Kalpana MD**
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Garfield Heights, OH 44125
Anesthesia

*** † Varyani, Nand MD**
Anesthesia

*** Varyani, Sandhia MD**
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OB/GYN

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*** Vasavada, Sandip MD**
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Urology

***Venkat, Vasuki, MD**
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Nephrology

***Venna, Prabhakar MD**
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Cleveland, OH 44109-1709
Anesthesiology

*** Vibhakar, Nilla MD**
Pediatrics

*** Vibhakar, Shardul MD**
Radiology, Diagnostic

*** Vuppala, Murty MD**
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Pediatrics

Vyas, Chinmay, MD
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Family Medicine

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Pediatrics

***Yadavelli, Gopal MD**
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Infectious Disease/Internal Medicine

***Yalavarthy, Umesh MD**
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Nephrology

***Zanotti, Salena, MD**
36901 American Way Suite A . . . . . Office: 440-930-6200
Avon, OH 44011
OB/GYN

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† *Deceased*

Listing of Physicians by Specialty

Allergy
Durve, Mohan MD
Swamy, Kumar MD

Anesthesia
Adur, Anjali MD
Bhavani, Sekar MD
Deogaonkar, Anupa,MD
Ebrahim, Zeyd MD
Gupta, Parshotam C. MD
Jagetia, Anil MD
Jhala, Varsha MD
Joshi, Vinod MD
Kalhan, Santosh MD
Kapadia, Jyotika MD
Maheshwari, Kamal MD
Maniar Smita MD
Mulgaokar, Girish MD
Patel, Dineshchandra MD
Patel, Narendra S. MD
Perumbeti, Prasad P. MD
Pradhan, Minal MD
Raj, Chandra MD
Rajagopalan, Sudha MD
Ramachandran, Mangalakaralpudur, MD
Ramachandran, Saraswati MD
Reddy, Kalva MD
Shah, Chirag MD
Shah, Pankaj MD
Sidhu, Kanwaljit MD
Sidhu, Tejbir MD
Sivasankaran, S MD
Tamaskar, Mandakini MD
Tamasker, Raghavendra MD
Udayashankar, S. V. MD
Varma, Kalpana MD
Venna, Prabhakar MD

Cardiology
Ahluwalia, Charanjit MD
Bhaiji, Khushal C. MD
Bolla, Ravisankar MD
Brahmanandam, Maddikunta MD
Brahmbhatt, Ramesh MD
Chawla, Rakesh MD
Dhingra, Rahul MD
Ginwalla, Mahazarin, MD
Jain, Mukesh, MD
Jayaswal, Bijay MD
Kapadia, Samir MD
Kondapaneni, Meera, MD
Maroo, Praful MD
Mistry, Vijay MD
Mitra, Kunal MD
Mohan, Sri Madan MD
Nair, Ravi MD
Osman, Najeeb, MD
Patel, Chetan MD
Rajan, Semur MD
Rakhit, Ashish MD
Sequeira, Thomas Mark MD
Sharma, Trilok C. MD
Vallabhaneni, Raj MD

Cardiology, Electrophysiology
Iyer, Inderesha, MD
Rao, Pratibha, MD

Cardiology, Interventional
Kondapaneni, Meera, MD

Cardiology Pediatric
Mehta, Sudhir MD
Patel, Chandrakant MD

Cardiothoracic Surgery

Chiropractic
Ty Dahodwala D.C.

Dentistry
Chhibber, Surabhi, MD (Pediatric)
Chhibber, Aditya, MD
(Orthodontistry)

Dermatology
Diwan Renuka MD
Khandekar, Prakash MD

Emergency Medicine
Dhillon, Jagprit MD
Patel, Vijaykant MD
Paul, Randhir MD
Shah, Tushar MD

Endocrinology
Bindra, Sanjit, MD
Kashyap, Sangeeta MD
Kumar, Vikram MD
Mehta, Adi, MD
Rao, Pratibha, MD

ENT
Haria, Chandra MD
Mallik, Gagan MD
Mehta, Govind MD
Shah, Ajit C. MD

Family Practice
Ahuja, Payal, MD
Apte, Manohar MD
Desai, Dipalii, MD
Dravid, Sheela MD
Gatha, Harilal G. MD
Julka, Neeraj MD
Sehgal, Bindu MD
Tirounilacandin, Pazhaniaandi, MD
Ujla, Dilip MD
Vallabhaneni, Rajani MD
Viswanath, B. MD
Vyas, Chinmay, MD

Functional Neurosurgery
Deogaonkar, Milind, MD

Gastroenterology
Dalal, Bankim MD
Khambatta, Parvez MD
Kumar, Unni P.K. MD
Mahajan, Subhash MD
Nair, Siva MD
Natesan, Arumugam MD
Parikh, Keyur, MD
Patel, Dinubhai MD
Pola, Laxshimaiya MD

Geriatrics
Arora, Lal P. MD
Bhavnani, Sanjeev MD
Gudla, Jyothi MD
Meyyazhagan, Swarnalatha MD
Pallaki, Muralidhar MD
Vallabhaneni, Rajani MD

Hematology/Oncology
Bhatt, Mukesh MD
Gupta, Mona MD
Kantharaj, Belagodu MD
Makkar, Vinit MD
Mendpara, Suresh MD
Mitra,Neha MD
Prithviraj, Panju MD

Hospitalist
Chimalakonda, Ravi Kumar, MD

Infectious Disease
Damodaran Chitra MD
Gopalkrishna, K. V. MD
Shekar, Raja MD

Internal Medicine
Aggarwal, Nidhi MD
Bafna, Mohan L. MD
Baishnab, Radha R. MD
Balaji, Harigopal, MD
Bhaiji, Alok MD
Bhalla, Rakesh MD
Bhimani Jayanti MD
Bindra, Sapreet, MD
Choudhary, Sanjay MD
Dasari, Narayana L. MD
Dhillon, Harmohinder MD
Gudla, Jyothi MD
Gupta, Arun MD
Gupta, Geeta MD
Jain, Rashmi, MD
Jethva, Natwar MD
Jhala, Nilamba MD
Kansal, Sunil MD
Kapoor, Gopal MD
Karimpil, Joseph MD
Kalepu, Sudheera, MD
Khatri, Saloni MD
Kotak, Sandeep, MD
Kothari, Samir MD
Krishnan, Ravi MD
Kumar, Praveer MD
Lalwani, Vidya MD
Lele, Shreeniwas MD
Majmudar, Himanshu MD
Majmudar, Smita MD
Mehta, Neil MD
Mehta, Rajendra MD
Mehta, Usha MD
Mistry, Darshan MD
Mistry, Niraj MD
Mukunda, Beejadi MD
Natesan, Corattur, MD
Nayak, Hemanta MD
Oza, Sudhir MD
Padmanabhan, Ravindran MD
Pandit, Mukul MD
Pandit, Vidya MD
Pania, Vimla D. MD
Patel, Mohan MD
Patel, Vinod MD
Paul, Bobby MD
Pillai, Latha MD
Poseria, Nutan MD
Prasad, Sudhamani MD
Punjabi, Eshwar B. MD
Rao, Neelima MD
Reddy, Madhu MD
Reddy, S. Sethu MD
Roy, Somnath MD
Sandhu, Satnam MD
Saraiya, Jayshree MD
Saralaya, Sparsha MD
Sharma, Rajesh MD
Singh, Chandra V. MD
Swamy, Chaya MD
Tamaskar, Ila R. MD
Tamaskar, Ranjit B. MD
Turakhia, Ashwin MD
Umapathy, Kandasamy MD
Vasavada, Prasan MD
Yadavalli, Gopala MD

Neonatology
Achanti, Babu MD
Holla, Ira, MD

Nephrology
Ghose, Manesh K. MD
Pannu, Kulbir S. MD
Patel, Amit, MD, Pediatric
Raina, Rupesh, MD
Rao, Akhilesh MD
Sehgal, Ashwini MD
Simh, Deetu MD
Suresh, Keelapandal MD
Venkat, Vasuki, MD
Yalavarthy, Umesh MD

Neurology
Chandar, Krishan MD
John, Kuruvilla, MD
Kumar, Suresh MD
Lachwani, Deepak, MD
Mahajan Darshan MD
Muthusamy, Preetha, MD
Nayak, Sagarika MD
Patel, Dhruv MD
Ravishankar, K.C. MD
Shaikh, Aasef, MD
Subramanian, Thyagarajan MD

Neurology, Pediatric
Parikh, Sanjay MD
Sivaraman, Indu, MD

Neurosurgery
Deogaonkar, Milind MD
Sawhny, Bhupinder MD

Listing of Physicians by Specialty - continued

Nuclear Medicine

OB/GYN
Arora, Deepak MD
Arora, Urmila MD
Das, Jagannath MD
Gidwani, Gita MD
Jayavant, Arun MD
Jhaveri, Nalini MD
Kothari, Ajeet MD
Kothari, Purnima MD
Mahalaha, Saroj MD
Mehta,Dharmesh, MD
Mehta, Gita MD
Mehta, Hetal, MD
Parikh, Kamal MD
Parikh, Vibha MD
Patel, Urmila MD
Shinde, S. G. MD
Sundaresh, Shaila MD
Tamasker, Shobha MD
Thaker, Niranjana Shah MD
Varyani, Sandhia MD
Zanotti, Salena, MD

Occupational Medicine
Mahna, Satish MD
Patel, Maheshkumar MD
Patel, Tarulata MD
Patil, Ashok MD

Opthalmology
Aggarwal, Saroj MD
Bafna, Shamik MD
Ghasia, Fatema, MD
Gupta, Ajay MD
Kapadia, Mansavee MD
Krishnan, Nagureddi MD
Patel Mehta, Sangita MD
Singh, Annapurna MD
Singh, Arun MD

Optometry
Chatterjee, Arup K. OD

Orthopedics
Maheshwer, C. MD
Marshall, Cyril MD
Palekar, Sanjay MD
Patel, Mahendra MD

Pain Management
Kumar, Sanjay MD
Shah, Kalyani MD
Sogal, Ramesh MD

Pathology
Godbole, Medha M.D
Gogate, Leelawati MD
Gogate, Prema M.D
Madan Mohan, Gayatri MD
Mehta, Madhu MD
Murthy, Prabha MD
Patel, Minal MD

Pathology, Forensic
Balraj, Elizabeth MD
Murthy, Sreenivasa P. S. MD

Pathology/Immunology
Deodhar, Sharad D. MD

Pediatrics
Adhvaryu, Neela MD
Appachi, Elumalai MD
Appachi, Mala MD
Dipali, Aravind L. MD
Jain, Rajneesh MD
Khadilkar, Vidula MD
Kherani, Kausar MD
Krishna, Sangeeta MD
Nanavati, Shailesh MD
Pagedar, Saroj MD
Rao, Shakuntala MD
Rao, Sheela MD
Roy, Aparna MD
Shah, Jaya MD
Shah, Shashin MD
Sitabkhan, Rayeka MD
Sundaresh, H. P. MD
Swarup, Namita MD
Tandra, Brahmaiah MD
Vibhakar, Nilla MD
Vuppala, Murty MD

Perinatology
Shah, Yogesh MD

Pharmacy
Chawla, Ash

Physical Medicine/Rehabilitation
Sahgal, Vinod MD
Shah, Arunika MD
Shah, Kalyani MD
Tandra, Usharani V. MD

Physical Therapy
Shah, Surekha

Plastic Surgery
Bapna, Sumit MD
Makkar, Ritu MD
Vasu, Pandangri MD

Psychiatry
Adityanjee, A, MD
Adhvaryu, Hareendra MD
Cupala, Homai MD
Cupala, Jitendra MD
Ebrahim, Lilian MD
Hegde, Shura, MD
Mahajan, Nitika, MD
Mude, Jagdish MD
Parikh, Kalpana MD
Rao, Kancherla S. MD
Rohira, Lalsingh MD
Shah, Bharat J. MD

Pulmonary Medicine
Dacha, Harinathrao MD
Gosain, Sudhir MD
Gupta, Rajendra MD
Iyer, Sridhar K. MD
Khandelwal, Anand MD
Makadia, Ashok P. MD
Mehta, Atul C. MD
Panchagnula, Sastry MD
Rao, L.C. MD
Suri, Anu, MD

Oncology
Ahluwalia, Manmeet MD

Radiation Oncology
Ambekar, Anjali MD
Patel, Ashwin MD
Patel, Chandralekha MD
Sharan, Vishwa MD

Radiology
Batchu, Chandra, MD
Jain, Rachana, MD
Jain, Vikas, MD
Kang, Preet, MD
Kanvinde, Mangesh, MD
Kosaraju, Vijaya, MD
Mody, Malay MD
Patel, Bhupendra MD
Patel, Deodutt MD
Patel, Kirit A. MD
Ram, Dasarathi MD
Ramana, C.V. MD
Vachhani, Neil, MD
Vibhakar, Shardul MD

Rheumatology
Hampole, Vagesh MD

Sleep Medicine
Ahluwalia, Harneet MD
Shah, Vishal, MD

Surgery, Cardiothoracic
Apte, Susan MD
Gill, Inderjit MD
Sekhon, Baldev MD
Sudheendra, R. MD

Surgery, General
Toms, Augustin MD
Chari, Vedantum R. MD
Deshpande, Krishna MD
Domadia, Manu MD
Kampani, Shanta MD
Kalepu, Anand Rao, MD
Narichania, Dilip MD
Patel, Mita, MD
Patel, Paresh MD
Patel, Vasant MD
Raj, Prasanta MD
Singh, Kuldeep MD
Tewarson, Ivan MD
Vaidya, Vijaykumar MD

Transplantation Surgery
Krishnamurthi, Venkatesh MD

Urology
Cherukuri, S. MD
Jawa, Prem S. MD
Kedia, Kailash MD
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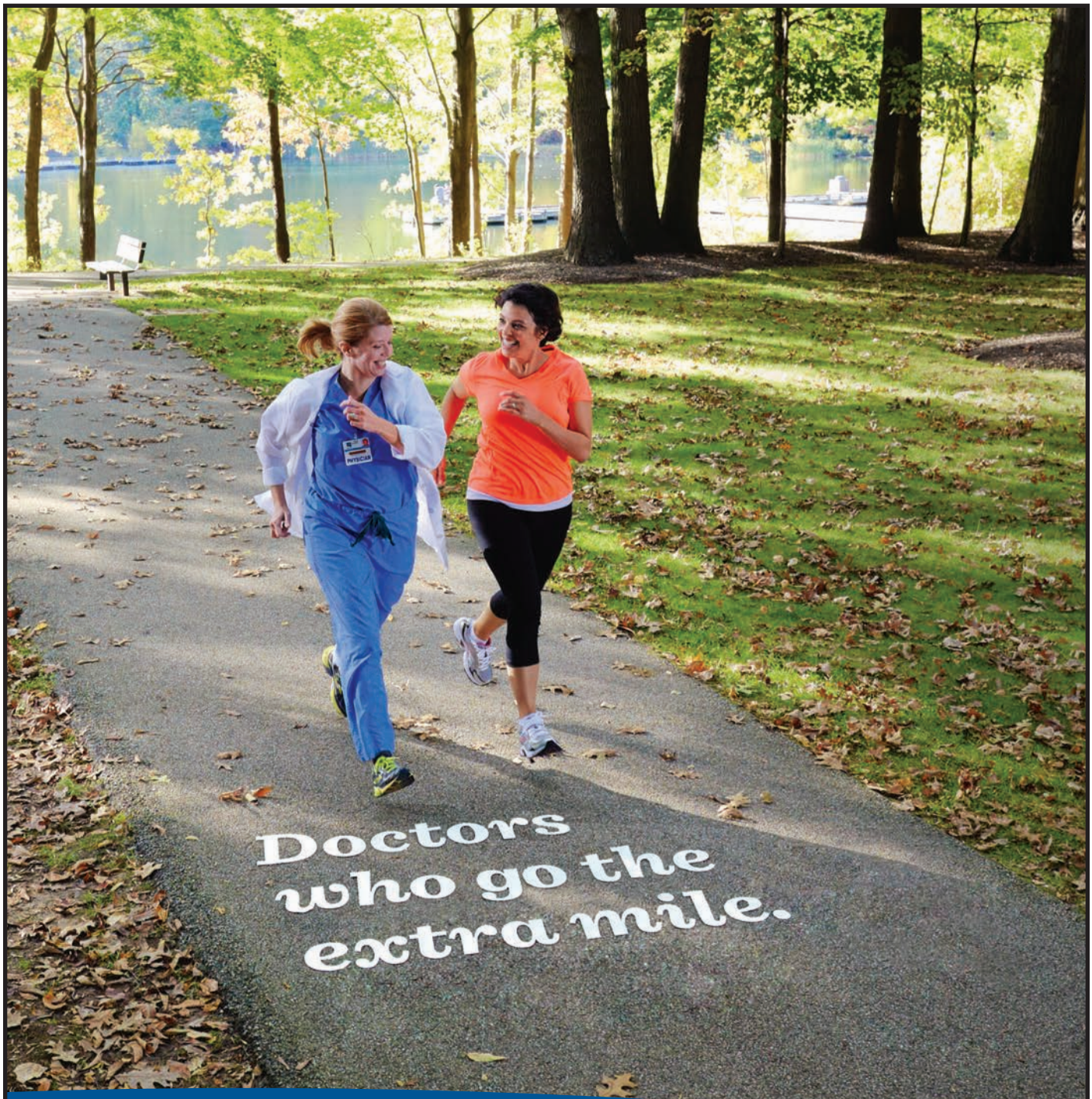
From Dr. Harbhajan Parma,
President



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