**CONTRAST-INDUCED NEPHROPATHY IN ELDERLY HOSPITALIZED PATIENTS AND IMPACT IN NORTHERN OHIO**

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**Background**: Contrast-induced Nephropathy (CIN) is a major cause of mortality and morbidity among elderly patients. Elderly patients who suffer from impaired renal function are at an increased risk of developing CIN. A systematic review of literature was performed to understand the occurrence, risk factors, and appropriate preventive measures for CIN in the elderly patients. The results were put into perspective for Northern Ohio, a region with a growing elderly population and increased use of hospital services.

**Methods:** Our study methodology adhered to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) Statement for systematic reviews guidelines. The PubMed, EMBASE, and CINHAL databases were utilized. All prospective, cross-sectional or retrospective studies investigating CIN in elderly were evaluated for eligibility. Studies were included if they were: at the level of evidence between I and IV, written in English, published within the last 15 years and included human subjects at the age of 80 and over. Studies that only reported issues other than different contrast media, risk factors, epidemiology, or pathophysiology were excluded. 930 studies were initially considered prior to exclusion criteria. 68 studies were used in our final analysis.

**Results:** The development of nephrotoxicity in elderly patients following the introduction of contrast media during invasive and diagnostic procedures is a relatively common occurrence in hospitals. Several studies reported the frequent occurrence of contrast induced nephropathy in the elderly over the age of 85. Multiples studies bolster the notion that age by itself is a risk factor for developing contrast-associated nephropathy. Studies have shown a dose-dependent risk of renal dysfunction; lower doses of contrast are relatively safer, but they are not devoid of risk. Prospective randomized trials established significant distinctions between contrast agents based upon their chemical attributes. The use of first generation hyperosmolal ionic contrast agents is associated with a greater risk of nephropathy compared to nonionic low osmolal or iso-osmolal agents.

**Discussion:** Awareness of CIN is particularly important for physicians practicing in Northern Ohio hospitals, due to the region’s growing elderly population. By the year 2020, 1 out of every 4 residents in half of all counties in Ohio will be at least 60 years of age.According to a recent projection, by 2030, nearly one-third of residents of Cuyahoga County will be over age 60.Thus, greater awareness of CIN and its prevention is particularly warranted among Northern Ohio physicians. Based upon the current studies and review, CIN appears to be common among elderly patients, leading to acute renal function impairment. Physicians should recognize key risk factors and take steps to reduce CIN in high risk patients. Low-osmolar and iso-osmolar media should be utilized to prevent CIN in the at-risk patient population.