

Title: Dialysis Disequilibrium Syndrome

Author(s): Sarisha Mahajan, Rupesh Raina

Affiliation: Revere High School

Introduction:

Dialysis disequilibrium syndrome (DDS) is a rare clinical complication in patients with End-Stage Kidney Disease on hemodialysis (HD). Patients with preexisting neurological conditions and of extreme ages are at increased risk. Due to the difficulty in confirming the diagnosis and underreporting, DDS incidence is not well known. The literature review aims to provide a clear picture of the pathogenesis, and effective management strategies of the syndrome.

Methods:

A literature search was performed in PubMed/Medline and Embase. After review by three independent reviewers, studies were included if there was a development of DDS in patients undergoing HD. A descriptive analysis was conducted analyzing the frequencies of symptoms and various treatment management.

Results:

A total of 49 studies (321 samples) were included out of 276 articles. The subjects included 127 adults, and 75 children. The most common symptoms were headache, nausea, vomiting, confusion, and seizure. HD was the most common dialysis reported (43 studies). Twelve studies either immediately switched to or began their dialysis with CVVH/CVVHDF or PD.

Conclusions:

DDS was most prevalent during HD. Patients who initially received or switched to CVVH/CVVHDF, PD, or HF showed little to no symptoms of DDS. Decreasing the speed of dialysis can also reduce symptoms of DDS. Another strategy to reduce symptoms with rapid HD is to replace the loss of urea with active substrates like sodium, mannitol, glucose, and or by urea itself. Early recognition of DDS symptoms and timely preventive measures are crucial to improving patient outcomes.