**The Impact of Dialysis Dependence and Modality on Complications after Carpal Tunnel Release**

**Abstract**

**Purpose:** To investigate (1) the cumulative incidence of carpal tunnel syndrome (CTS) in dialysis-dependent patients between 2006-2014, (2) the cumulative incidence of carpal tunnel release (CTR) in the dialysis-dependent patients, and (3) the differences in postoperative complications after CTR between patients utilizing two dialysis modalities and matched controls.

**Methods:** Using a national Medicare database, dialysis-dependent patient with CTS and those who underwent CTR were identified and compared to controls who were not dialysis-dependent. Trends in both CTS and CTR in dialysis-dependent and control patients were analyzed. The dialysis-dependent group undergoing CTR were then subdivided by dialysis modality. First, peritoneal dialysis (PD) patients were identified and then hemodialysis (HD) and finally non-dialysis-dependent controls were matched to the PD patients. Complications were compared between these three groups, including hospital admission, emergency department (ED) visits, infection, revision CTR, and incidence of chronic regional pain syndrome (CRPS).

**Results:** The incidence of CTS and CTR in dialysis-dependent patients increased significantly relative to controls. Dialysis-dependent patients had significantly increased rates of hospital admission (PD: OR 4.13, P < 0.0001; HD: OR 4.42, P < 0.0001), infection (PD: OR 2.32, P= 0.013; HD: OR 3.20, P<0.0001), and revision CTR (PD: OR 2.04, P = 0.009; HD: OR 1.62, P = 0.037). Overall, there were few differences in complication rates between PD and HD patients, with the exception of ED visits, which were significantly lower for PD compared to HD patients (OR 0.63, P= 0.038).

**Conclusions:** The relative incidence of both CTS and CTR increased in dialysis-dependent patients from 2006-2014. Dialysis-dependent patients are at a significantly increased risk for developing perioperative complications following CTR compared to matched controls, and dialysis modality does not appear to have a significant impact on complication rates.