

Sudden Death in Incident Dialysis Patients

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Am J Nephrol 2014;39:331–336
DOI:10.1159/000360547

Commentary

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Sudden (cardiac) death (SD) is a common cause of mortality in ESRD patients undergoing dialysis, presumably the consequence of a ventricular arrhythmia (e.g. ventricular fibrillation) resulting from acute myocardial (atherosclerotic) ischemia or electrolyte disturbances promoting re-entry rhythms in the damaged, hypertrophied and fibrotic myocardium commonly seen in advanced ESRD. Vazquez and co-workers studied the occurrence of SD in 285 incident hemodialysis or peritoneal dialysis patients to see if a SD risk-profile could be ascertained. The categorization of SD was somewhat confusing and overlapping, but SD accounted for a substantial fraction (about 27%) of total mortality, much higher than expected in a non-ESRD population. In multivariate analysis, a prior acute myocardial infarction and a spectrum of electrocardiographic abnormalities independently predicted SD. Interestingly neither left ventricular hypertrophy by QRS criteria, left ventricular mass or left ventricular ejection fraction (LVEF) were independently predictive, but the power to detect these associations may have been limited by the study size. Most of the patients had a LVEF within the normal range. Fluxes of K⁺ or Mg⁺⁺ were not assessed. Very few post-mortem examinations were performed.

The importance of this study is that simple tools (history and EKG) were capable of predating risk of SD. Next steps are to determine whether an intervention (such as administration of a beta-adrenergic receptor blocker or implantation of an

automatic cardiac defibrillator) can reduce SD in the high risk group (in a cost-effective manner) and to identify the specific modifiable factors that underlie the enhanced risk of SD in dialysis patients, compared to the general population.

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