

DIALYSIS
SUDDEN CARDIAC
DEATH PREVENTION?

Patients receiving renal replacement therapy are at a considerable risk of sudden cardiac death. Indeed, it has been proposed that sudden cardiac death is responsible for the deaths of about a quarter of patients receiving dialysis. Given this high incidence, it is important to identify markers that are associated with a high risk of death in this patient population, and these markers should ideally be modifiable. Now, researchers in the Netherlands, led by Mihály de Bie and Wouter Jukema, have found that a vectocardiographic parameter that can be easily quantified from the 12 lead echocardiogram (spatial QRS-T angle) is such a marker. Furthermore, they have outlined the mechanical properties of the heart that affect this measure and that can potentially be modified with treatment.

“We hypothesized that mechanical properties of the heart, such as contractility and synchronicity, could be important determinants of an abnormal spatial QRS-T angle and, therefore, the relationship between several modifiable mechanical properties and the spatial QRS-T angle were analyzed in the current manuscript,” explains de Bie. The study was conducted in 94 patients who were on dialysis and enrolled in the ICD2 protocol. Each patient underwent an extensive workup at the initiation of the study, allowing the researchers to assess the properties affecting the QRS-T angle.

The most important findings of the study are summarized by de Bie: “significant left ventricular systolic dyssynchrony is highly prevalent among dialysis patients, and among various echocardiographic and clinical variables, left ventricular ejection fraction and left ventricular systolic dyssynchrony are independent predictors of an abnormal spatial QRS-T angle—an important predictor of sudden cardiac death among dialysis patients.”

Importantly, these findings suggest that therapeutic strategies aimed at improving left ventricular function (such as β -blocker therapy and invasive coronary revascularization) and at reducing left ventricular systolic dyssynchrony (such as cardiac resynchronization therapy and more-intensive dialysis) might reduce the incidence of sudden cardiac death and improve outcomes in patients on dialysis.

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Original article de Bie, M. K. et al. Echocardiographical determinants of an abnormal spatial QRS-T angle in chronic dialysis patients. *Nephrol. Dial. Transplant.* doi:10.1093/ndt/gft347