EARLY REPOLARIZATION ELECTROCARDIOGRAPHIC PATTERN RELATED TO LEVELS OF SERUM AND URINE PROTEIN IN PREDIALYSIS PATIENTS

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Early repolarization electrocardiographic pattern (ERP) has been associated to high arrhythmic risk in recent literature. The aim of this study is to evaluate the prevalence of ERP in chronic kidney disease (CKD) patients and its association with the underlying disease and laboratory parameters.

Ninety patients with CKD stages 1-5, not on dialysis, were subjected to electrocardiograhic study. The ERP was defined as presence of notch or slur in the end of QRS and J point elevation > 0.1 mV in ≥2 contiguous leads. All patients were subjected to blood tests including total serum protein, serum albumin, serum electrolytes and haemoglobin, and 24-hour total urine protein. The underlying disease of each patient was recorded. Prevalence of ERP and its association with underlying disease and laboratory findings was evaluated.

ERP was present in 37 (41.1%) of 90 patients with CKD. Patients diagnosed with membranous glomerulonephritis (MGN) had significantly higher probability of ERP (odds ratio 3.65, p=0.007) compared to the rest patients. Furthermore, patients with total serum protein< 6.5 g/dl had significantly higher probability of presenting ERP (odds ratio 2.80, p=0.02). Patients with MGN had significantly higher probability of total protein< 6.5 g/dl (odds ratio 4.06, p=0.001). In a logistic regression analysis, the presence of MGN (odds ratio 4.17, p=0.018), and proteinuria (odds ratio per lt increase 1.26, p=0.012) were found to be independent prognostic factors for ERP. No correlation with ERP and stage of CKD was revealed.

Patients with MGN had higher probability of ERP, possibly due to hypoproteinemia <6.5 g/dl which is more frequent in these patients. Total serum protein < 6.5 g/dl was significantly correlated with ERP while proteinuria was an independent prognostic factor for ERP.