

candidates with end stage renal disease. Taking this into consideration, all renal transplant patients must be closely followed with ECGs.

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### ALTERATIONS IN QTc AND PR INTERVALS IN RENAL TRANSPLANT PATIENTS RECEIVING IMMUNOSUPPRESSIVE DRUGS

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**Introduction** Kidney transplantation is the treatment of choice for most patients with end-stage renal disease (ESRD). Strategies to increase donor organ availability and to prolong the transplanted kidney's survival have become priorities in kidney transplantation. Standard immunosuppressive therapy consists of initial treatment and maintenance protocols to prevent rejection and short courses of more intensive immunosuppressive therapy to treat episodes of acute rejection. The effects of this drugs on electrocardiographic findings are not well known. An increased corrected QT interval (QTc) is associated with a variety of cardiac diseases and predicts sudden death. The PR interval reflects the time of the electrical impulse conducting from the sinus node through the AV node and entering the ventricles. The PR interval is therefore a good estimate of AV node function. The aim of our study is to investigate the effect of two different calcineurin inhibitors (cyclosporine A and tacrolimus) on QT and PR interval in renal transplant patients.

**Methods** In this study, renal transplant patients receiving immunosuppressive drugs were evaluated to investigate the post-transplantation alterations in QTc and PR interval. A total of 74 patients were assigned into the study (51 patients on Tacrolimus and 23 patients on cyclosporine A). The mean time after transplantation was 18 months. QT dispersion was calculated according to Bazette's formula from the 12 leads electrocardiography. The corrected QT (QTc) and PR interval values from the follow-up ECG (at least 6 months) were compared with pretransplant ECGs.

**Results** Statistically significant increase in QTc times were observed in both groups receiving tacrolimus and cyclosporine ( $p=0.022$  and  $p=0.005$ , respectively). Although PR intervals were significantly shortened in patients receiving tacrolimus ( $p<0.0001$ ), no statistically significant shortening was observed in cyclosporine group ( $p>0.05$ ).

**Discussion** Past studies investigating the effects of immunosuppressive drugs on electrocardiographic findings generally focused on QT intervals. However, PR interval was also analysed in our study. We showed that QT interval was effected by tacrolimus and cyclosporine A. Moreover we found that tacrolimus also shortens PR interval. Shortening in PR interval may be related to increases in heart rate. Another explanation for this shortening may be activation of a pre-existing accessory pathway due to AV blockage induced by tacrolimus. QTc prolongation is known to be an independent predictor of mortality in renal transplantation