

## ABSTRACT

### **Role of clinical risk factors and polymorphisms in glucocorticoid receptor gene in the determining the risk of developing diabetes after kidney transplantation**

**INTRODUCTION:** New-onset diabetes after transplantation (NODAT) is a recognized metabolic complication of kidney transplantation: its estimated rates at 12 months post transplant are between 20% and 50% for kidney transplants and it is associated with increased risks of graft rejection, infection, cardiovascular disease and death. Transplant-specific risk factors for NODAT, such as corticosteroids and calcineurin inhibitors, play a dominant role in its pathogenesis. Furthermore polymorphisms in glucocorticoid receptor gene are common in the human population and play a role in regulation of glucocorticoid sensitivity.

**OBJECTIVE:** Determine the incidence genetic and clinical risk factors for NODAT among kidney recipients in our centre. **PATIENTS AND METHODS:** We studied 96 kidney allograft recipients ( Male 53, Female 43, mean age  $56.02 \pm 11.03$  year) regularly followed at our Transplantation Center (at 3, 6 and 12 months), without evidence of preexisting diabetes. The presence of arterial hypertension, dyslipidaemia and BMI were assessed in all patients. All the patients were genotyped for two GR polymorphism (BclI, A3669G). Analysis of the GR gene polymorphisms were determined using Real-Time PCR System and Taqman allelic discrimination assays. **RESULTS:** Three months after renal transplantation 27% recipients developed NODAT. There were no significant differences in gender, age, mean daily steroids doses and genetic polymorphism in GR between patients with NODAT and healthy control. Patients with NODAT had a BMI significantly increased compared with patients without NODAT ( $25 \pm 4.56$  vs.  $21.84 \pm 2.58$ ,  $p = 0.02$ ). **CONCLUSIONS:** The prevalence of NODAT in our center is similar to that found in the literature. BMI and obesity are a risk factors for NODAT; in contrast age, gender, daily steroids doses and genetic polymorphism in GR are not correlates with its development.