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**ELEVATED LEVELS OF URIC ACID ARE RELATED TO LONG TERM GRAFT LOSS IN A COHORT OF KIDNEY TRANSPLANTED PATIENTS**

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**INTRODUCTION AND AIMS:** Elevated levels of uric acid are frequently observed in general population and during chronic kidney disease. It remains inconclusive whether hyperuricemia (HU) is a true risk factor for kidney graft failure. The aim of our study is to evaluate the prevalence and the relationship with clinical and biochemical parameters of HU during the first year of kidney transplantation (KTx). In addition, the impact of HU on long term graft outcome will be analysed.

**METHODS:** In 512 KTx pts (age: 48[40;58] yrs - 306 males), transplanted in our unit between 2004 and 2016, clinical parameters, blood and urinary samples were collected at 1, 6, 12 mths after KTx. Median follow up was 6[3-10] yrs. Presence of HU was defined calculating the median of average levels of uric acid recorded during the first year of KTx (Uric-av): 6.3[5-7] mg/dL. Patients with uric acid  $\geq$  6.3 mg/dL were categorized as hyperuricemic. In addition, first year of KTx average levels of serum creatinine (sCr-av), and of daily urinary protein excretion (ProtU-av) were calculated.

**RESULTS:** Eighty-five percent of patients received a kidney from a deceased donor; 71% and 21% of patients were respectively treated with haemodialysis and peritoneal dialysis before KTx. Time of dialysis was 48[30-70] mths. HU was found in 37%, 55% and 57% of patients at 1st, 6th and 12th mth of KTx respectively. At the same timepoints, urate-lowering medications were administered in 2%, 3% and 5% of patients. In 25% of patients (HU+), HU was found in all the three evaluations. Males resulted significantly more affected by HU ( $p=0.01$ ). HU+ had significantly higher BMI and worse control of blood pressure during the first year of KTx. In addition, HU+ had higher levels of serum creatinine at the three timepoints ( $p<0.0001$ ). During the follow up time, 44 patients restarted dialysis (D+). HU+ were 70% of them ( $p=0.01$ ). Compared to patients in regular follow up, D+ had significantly higher sCr-av ( $p=0.006$ ), ProtU-av ( $p=0.0004$ ) and Uric-av ( $p<0.0001$ ). In multivariate analysis, Uric-av resulted the stronger independent parameter related to graft loss (Uric-av HR=1.53 -  $p=0.0006$ ; sCr-av ns; average ProtU-av HR 2.20  $p=0.01$ ). This result was confirmed also by Kaplan Meier analysis in which significantly worse long term graft prognosis in HU+ patients was found ( $p<0.0001$ ).

**CONCLUSIONS:** Our data confirm that in KTx patients high levels of uric acid are frequently found during the first year of KTx, and are related to metabolic and renal functional parameters. In addition, uric acid and HU seems to be related to graft outcome independently to renal function.