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POST-RENAL TRANSPLANT LEUCOPENIA AND ITS IMPACT ON GRAFT AND PATIENT OUTCOME

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Abstract:

INTRODUCTION AND AIMS: Post-renal transplant leucopenia is a common clinical challenge which needs fine dose adjustment of precipitating drugs, proper management of complications and use of granulocyte colony-stimulating factor (G-CSF). Serious infections, chemo-prophylactic and immunosuppressive drug reduction may affect patient and graft outcome. **Aim:** To study incidence and management of posttransplant leucopenia and its impact on graft and patient outcome after one year.

METHODS: We studied renal transplant patients operated during 2010 in our center who received immunosuppression and chemoprophylaxis according to our protocol, valgancyclovir 900mg and septrin ½ D/S tablet daily for 6 months. Significant leucopenia (<4000x10^9) was managed by reduction of valgancyclovir and mycophenolate mofitel (MMF) and giving G-CSF according to the response. All patients were screened for CMV infection by CMV-PCR titers at time of transplant and at 3, 6, 9 and 12months after transplant.

RESULTS: Over one year, 79 patients were transplanted and divided into leucopenia and non-leucopenia group (group 1 and 2 respectively). Twenty seven patients were in group1 (34.17%) and had at least one attack of significant leucopenia (p0.02). Mean total leucocytic count of the whole year of follow up period was significantly lower in group 1(4294±1488 x10^9 versus 8205±2123x10^9, p0.0001). Valgancyclovir and septrin were stopped completely in 76.9% while MMF was reduced to ≥50% in 85.7% in group1 (p0.0001). Mean neutrophil count was 964.3±192.7x10^9 in group1 with significant positive correlation with total leucocytic count (p0.009).G-CSF injections were given to all patients in group1 with a mean dose of 146.6megaunit/patient without significant side effects except for mild to moderate low back pain. There were no significant differences in demographic data including induction immunosuppression (p0.327), maintenance immunosuppression (p0.12), cases with delayed graft function (p0.994), BK viremia (0.601), and incidence of associated infections other than CMV (p0.15). Four cases of CMV infection were detected in group1 during the first 6months while none were in group2 (p0.012). There was higher number of posttransplant diabetes mellitus (PTDM) in group1 (p0.037) most likely due to higher maintenance doses of steroids and tacrolimus to compensate for the MMF dose reduction. Mean rejection episode/patient was significantly higher in group1 (0.62±0.852 versus 0.28±0.49, p0.03). There was no difference in patient outcome at 12months (100% in both groups). Graft failure was 3.7% in group1 versus 7.7% in group2 without significant difference (p0.44).

CONCLUSIONS: Significant reduction of MMF and valgancyclovir due to leucopenia resulted in significantly higher rate of rejection episodes, CMV infection and PTDM. High doses of G-CSF were used safely to treat neutropenia without significant side effects. Prospective studies using smaller dose of prophylactic valgancyclovir are required.

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