INFLUENCE OF 1, 25-DIHYDROXYVITAMIN D3 ON HLA-DR EXPRESSION, MACROPHAGE INFILTRATION AND GRAFT SURVIVAL IN RENAL ALLOGRAFTS

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It has been reported that 1, 25-Dihydroxyvitamin D3 (Vit-D) regulates class II HLA and CD4 antigen expression, as well as decrease the ability of monocytes to function as antigen-presenting cells. Thus we aimed to show the influence of Vit-D on HLA-DR expression, macrophage infiltration and graft survival in renal allografts.

Totally 102 renal transplant recipients were included in the study; 40 recipients had osteoporosis and were treated with Vit-D (Group D), 62 recipients without osteoporosis who didn't receive Vit-D treatment constituted the control group (Group C). HLA-DR expression of tubules, interstitium, peritubular capillaries (PTC's) were studied immunohistochemically and CD68 positive macrophage infiltration of tubules; interstitium, PTC's and arterial walls were evaluated. The decreasing intensity of PTC HLA-DR (PTC-DR) expression was accepted as the increasing degree of the destruction of PTC's.

Although before treatment there was no significant difference between Group D and Group C in regards of the number of acute rejection (AR) episodes, after treatment, the difference became significant ($p<0.05$) that Group D patients showed lower number of AR episodes. Group D patients showed significantly lower degrees of tubular and interstitial HLA-DR expression, interstitial, tubular, vascular and PTC macrophage infiltration compared to Group C patients ($p<0.01$ for all). In addition the PTC HLA-DR expression was higher and therefore PTC destruction was lower in Group D patients compared to Group C patients ($p<0.001$). The overall 1-. 3- and 5-year graft survival rates for Group D were 97%, 97% and 82% respectively and it was 96%, 77% and 69% for Group C patients ($p<0.01$).

In conclusion Vit-D treated recipients showed lower incidence of PTC destruction, AR and graft loss. This may be explained by the immunosuppressive effect of Vit-D by declining renal HLA-DR expression and renal macrophage infiltration. Thus these results highlight the potential use of Vit-D in renal allografts.