Low utility of serum 25-hydroxyvitamin D3 and 1, 25-dihydroxyvitamin D3 in predicting peripheral Treg and Th17 cell counts in ESRD and renal transplant patients

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Abstract:

and inhibits Th17 cells. The immune-modulatory role of vitamin D in chronic kidney disease (CKD) and renal transplant patients is unclear. We measured whether different serum levels of vitamin D were associated with an increased or decreased presence of lymphocyte subsets including Treg and Th17 cells in end-stage renal disease (ESRD) and renal transplant recipients. Methods: Eighty-seven renal transplant recipients and 53 end-stage renal disease (ESRD) patients were enrolled in this study. The absolute counts of CD4+ and CD8+ T, CD16+ CD56+ NK, CD19+ B, CD4+ CD25+ CD127- Foxp3+ (Tregs), Helios+ Tregs, CD38+ Tregs, and CD4+ CD17+ (Th17) cells were analyzed in peripheral blood in both patient groups. In addition, serum 25 (OH) D3, 1, 25 (OH)2 D3, IL-6, IL-17, IL-23, and TGF-β1 were measured. The association between lymphocyte subset counts and 25 (OH) D3, 1, 25 (OH)2 D3, IL-6, IL-17, IL-23, and TGF-β1 were measured. The association between serum 25 (OH) D3 and 1, 25 (OH)2 D3 and IL-6, IL-17, IL-23, and TGF-β1 were measured. The association between serum 25 (OH) D3 and 1, 25 (OH)2 D3 levels were not independently associated with peripheral CD4+ T, CD19+B, CD16+CD56+NK, Treg, or Th17 cell counts. In contrast to serum 25 (OH) D3, serum1, 25 (OH)2 D3 was positively associated with CD8+ T cells counts in renal transplant recipients.

Conclusion: Our findings indicate low utility of serum 25 (OH) D3 and 1, 25 (OH)2 D3 levels in predicting a change in lymphocyte subset counts in ESRD and renal transplant patients.

Published In:

Transplant Immunology , NULL , 3-10