

## Zinc Level and Prevalence of Rejection in Transplanted Patients

J Roozbeh<sup>1</sup>, M Sharifian Dorche<sup>2\*</sup>, R Afshariani<sup>3</sup><sup>1</sup>Urology Nephrology Research Center, Department of Internal Medicine, Shiraz University of Medical Sciences, Shiraz, IR Iran<sup>2</sup>Department of Neurology, Shiraz University of Medical Sciences, Shiraz, IR Iran<sup>3</sup>Department of Public Health, School of Health and Nutrition, Shiraz University of Medical Sciences, Shiraz, IR Iran

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## Dear Editor,

High zinc levels may cause rejection of allograft organs by promoting the immune system. So, it seems that limiting zinc supplements and all foods and drugs with a high amount of zinc may be effective in the prevention of allograft organ rejection after transplantation. Zinc is an essential micronutrient for human growth, development, and immune function. Zinc deficiency accompanied by the quality and functional insufficiency of T-cell-mediated immunity and by the diminished phagocytic activity of neutrophils (1). Kabu K *et al.* in Jul 2006 revealed that zinc was involved in multiple steps of Fc epsilon RI-induced mast cell activation and required for degranulation of cytokines such as IL-6 and TNF- $\alpha$  production and lymphocytes proliferation (1, 2). A study by Chen *et al.* (Nov 2005) on the effects of different levels of zinc nutrition status on the immune function of mice spleen lymphocytes showed that zinc status affected the immune function and production of IL-2 in spleen lymphocytes (3). Rejection is one of the most important problems after organ transplantation. The immune system plays a critical role in this process. In the context of allograft rejection, T cells play a central role in the immune system's response, and once activated, they secrete cytokines and chemokines to activate and attract cells such as CD8 T cells and macrophages into the allograft. They also interact with B cells that secrete alloreactive antibodies that eventually lead to allograft destruction (4). Moreover, transplant rejection has both cellular and humeral components, and some of the cytokines produced by T cells and macrophages (TNF- $\alpha$ ) may mediate apoptosis of graft cells (5). Given all of these findings, high zinc levels may actually result in rejection in the allograft or-

gan by promoting the immune system.

Keywords: Zinc; Prevalence; Transplant recipient

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\* Corresponding author at: Maryam Sharifian Dorche, Department of Neurology, Shiraz University of Medical Sciences, Shiraz, IR Iran. Tel: +98-7116282996, +98-9177133608, e-mail: maryam\_sharifian@yahoo.com  
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