

Effects of micronutrient supplementation on immune status and hand grip strength of male elderly people in Kelurahan Cempaka Putih Barat, Jakarta

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Abstrak

A single blind intervention study for 9 weeks was conducted in Kelurahan Cempaka Putih Barat, Center Jakarta. This was to determine the effects of micronutrient supplementation on the immune status and hand grip strength of the free-living male elderly aged 60 -75 years old. The total number of subjects at baseline study were 97 male elderly, which were then randomly assigned into 49 subjects in the supplemented group and 48 subjects in the placebo group. The percentage of T-suppressor cells of the micronutrient supplemented group increased significantly from 28.3 % to 30.7 %. The absolute counts of immune status also increased. In the micronutrient supplemented group TLC , T- cells, T -Helper cells, T-suppressor and NK-cells increased significantly after 9 week micronutrient supplementation. However compared to the placebo group only TLC (787.4 vs 287.0), T-cells (453.2 vs 160.3), and T- suppressor cells (183.7 vs 57.4) showed significant improvement. The hand grip strength as expressed by the lefthand, right hand and sum of both values remained similar to baseline. The serum zinc and-retinol of the supplemented group significantly increased after nine weeks micronutrient supplementation (13.7 to 18.8 umol/L and 1.10 to 1.42 umol/L, respectively). The changes of serum zinc and retinol were significantly higher in the supplemented group compared to the placebo group. The micronutrients status (serum retinol and serum Zinc) had increased in the supplemented group and lead to lower prevalence of hyporetinolemia and hypozincemia. The improvement of the immune status in the micronutrient supplemented group were not correlated with the serum retinol and zinc. However in the placebo group the change of serum retinol had negative correlation with the T-cel/, T helper and T -suppressor.