ABSTRACT

THE EFFECT OF Zn SUPPLEMENTATION ON RETINAL NERVE FIBER LAYER THICKNESS IN TUBERCULOSIS PATIENTS TREATED WITH ETHAMBUTOL

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Purpose: To analyze the effect of Zn on retinal nerve fiber layer (RNFL) thickness in tuberculosis (TB) patients treated with ethambutol

Methods: This was a quasi-experimental study with pre-test and post-test control group design. The subjects included were new TB patients that received Ethambutol who admitted to pulmonology outpatient clinic Paru Hospital, Surabaya. They were divided into two groups. The treatment group administered Zn supplementation and the other was control group. The patients were examined visual acuity, color vision, anterior segment, IOP, fundu and SD-OCT for three consecutive times (before and during therapy) in Surabaya Eye Clinic. Independent t-test and Spearman correlation test were used for statistical analysis.

Result: Forty one patients with 80 eyes enrolled the study. Most of them were male (63.4%), with range of age 21 to 30 years old (36.6%) and smoking behaviour (56%). About 75.6% of subjects not consuming alcohol, 92.7% had three times daily dietary habit, 34.1% had four kind of meal containing Zn, and 75.6% suffered no systemic disease. There were no correlation between RNFL defect with gender, age, smoking behaviour, alcohol users, dietary habits, amount of meal containing Zn, and history of systemic disease with $p = 0.23$; 0.7; 0.29; 0.13; 0.45; 0.36; 0.10 respectively. There was significant difference on RNFL thickness in the temporal quadrant after one and two months treatment with $p=0.049$; 0,028 respectively. There were no significant differences in the superior quadrant, nasal quadrant, inferior quadrant and average RNFL thickness with $p=0.9$; 0.7; 0.5; 0.7 respectively.

Conclusion: Zn supplementation can decrease RNFL thickness in the temporal quadrant that measured using SD-OCT.

Keywords: TB patients, Zn, RNFL, Ethambutol