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Abstract

Hearing is one of the most vital functions in life. In order to maintain communication, normal hearing is crucial. Hearing loss can be caused by various drugs or agents that are toxic, one of mentioned is autotoxicity of Kanamycin. Such drug effect can cause sensorineural type of hearing loss. High frequency sensorineural hearing loss is the consequence of post Kanamycin administration in Multi Drug Resistance Tuberculosis (MDRTB) patients. The characteristics of hearing loss are permanent, progressive, bilateral and sometimes accompanied by tinnitus. The objective of this study is to analyze the correlation between superoxide dismutase (SOD) serum level and sensorineural hearing loss in MDRTB patients. The cross-sectional study was conducted in 17 ears of MDRTB patients post Kanamycin administration. Six ears were normal and 11 ears suffered from hearing loss. This study was carried out in MDRTB outpatient department, Dr. Soetomo Hospital of Surabaya, from February to April 2012. The examinations included pure tone audiometry, tympanometry, 10 mm blood from cubital vein in vacuum tube that was sent directly (<1 hour) for SOD serum level check in Laboratory of Dr. Soetomo Hospital, Surabaya. In this study, from total of 17 patients post Kanamycin administration, those who met the criteria consist of 8 men (47.10%) and 9 women (52.90%). Mean pure tone audiometry with intensity ≥ 30 dB were in high frequencies (4000 Hz, 6000 Hz and 8000 Hz). The result of correlation between SOD serum level and hearing loss by Pearson correlation test, based on audiogram were p = 0.076 in frequency 4000 Hz, p = 0.809 in frequency 6000 Hz, and p = 0.974 in frequency 8000 Hz, which showed no significant differences (p > 0.05). There were no correlation between SOD serum level and sensorineural hearing loss in high frequencies. The hearing test results based on intensity level of hearing loss and SOD serum level check by Spearman’s correlation test was p = 0.628, that showed no significant differences (p > 0.05). In conclusion, this study showed that there was no correlation between Pure Tone Average (PTA) at frequencies, 4000 Hz, 6000 Hz, and 8000 Hz, or PTA based on intensity level of hearing loss, with SOD serum level in MDRTB patients. (FMI 2013;49:42-50)

Keyword : superoxide, dismutase, serum, sensorineural, multidrug, resistance, tuberculosis, .

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