ABSTRACT

THE ASSOCIATION OF INTERLEUKIN-10-1082G/A GENES POLYMORFISM WITH HEARING LOSS IN PULMONARY MULTIDRUGS RESISTANT-TUBERCULOSIS PATIENTS

Dramora Nepy Asmara

Introduction: Problems of tuberculosis (TB) eradication were increased with the presence of Mycobacterium tuberculosis (MTb) resistance to anti-TB drugs called MDR-TB. Genotype IL-10-1082G/A polymorphisms associated with the secretion of interleukin 10 (IL-10) as an anti-inflammatory cytokine play important role in the pathogenesis of MDR-TB infection. Management of MDR-TB using OAT kanamycin cause the effects of ototoxicity resulting in deafness. The IL-10 protective role of IL-10-1082G/A genotype against deafness due to kanamycin remains controversial.

Methods: Observational studies of cohort retrospective analysis of patients with MDR-TB treated at RSUD Dr. Moewardi Surakarta in 2011-2015.

Results: There were 81 subjects MDR-TB patients with genotype IL-10-1082G/A polymorphism. The proportion of IL-10-1082G/A paired allele genotypes were AA 9.9%, GG 4.9%, and GA 69%. Patients with MDR-TB with kanamycin therapy who experienced deafness were 55.5% with p=0.899 did not statistically significant. The degree of right ear audiometry p=0.375 whereas the left ear p=0.416 shows no significant association with IL-10-1082G/A genotype polymorphism. The mean onset of deafness of the three groups of polymorphisms was 2.51 ± 2.88 months after injection obtaining a statistically insignificant p=0.758 with IL-10-1082G/A genotype polymorphism. Polymorphisms in the GA genotype (55.1%) tend to had lower ototoxicity than the AA genotype (62.5%). GA genotype showed protective effect against deafness compared to other genotypes.

Conclusions: IL-10-1082G/A genotype polymorphisms were not associated with protection against deafness of OAT kanamycin in the treatment of MDR-TB. The degrees of audiometry and onset of deafness were not associated with IL-10-1082G/A genotype polymorphisms. GA genotype showed a protective effect against deafness compared to other genotypes.

Keywords: MDR-TB, polymorphism, genotype IL-10-1082G/A, deafness