

ABSTRACT**DNA Sequence Analysis in HB-EGF and CD9 Genes of Carriers and Diphtheria Patients**

Diphtheria is a very dangerous disease causing numerous problems in many parts of the world. There are a limited number of publications regarding diphtheria carriers. There are no host genetic studies on diphtheria. The objectives of this study were to analyse the DNA sequences of HB-EGF and CD9 genes of diphtheria carriers and cases. HB-EGF gene controls pro-HB-EGF, the receptor for diphtheria toxin. CD9 gene controls the co-receptor, CD9.

This study covered all carriers and patients recorded in the data of East Java Provincial Health Office and Balai Besar Lab Kesehatan (BBLK), Surabaya. All carriers and patients were visited in their own homes. Interviews, anthropometrical measurement, and blood collections were performed. Blood was analysed for DNA sequence (in ITD Unair Surabaya and 1st Base Lab in Selangor, Malaysia) and antibody titre (in BBLK Surabaya).

There were 27 carriers and 97 patients in the study. Most of the patients were listed in the period of 2012-2013. Silent mutations on codon 91 exon 3 gene HB-EGF were found in 25 subjects and silent mutations on codon 171 and 173 exon 6 gene CD9 in three subjects. We also found silent mutations on intron 5, point 35719 in 55 subjects. The mutation in intron 5 was significantly protective and tended to create the child a carrier instead of becoming a case. Statistical analysis showed no difference on exon 3 gene HB-EGF and exon 5 and 6 gene CD9. Antibody level was significantly different between carriers and patients. Low level antibody was associated with clinical illness more than carriers (PR all ages was 1.226).

We concluded that there were no differences between diphtheria carriers and patients related to DNA sequences of exon 3 gene HB-EGF and exon 5 and 6 gene CD9. There was a significant difference related to the mutation of intron 5 gene CD9.

Keywords : *diphtheria carriers and patients, DNA sequence, HB-EGF and CD9 genes, antibody*