ABSTRAK

Kelahiran prematur masih menjadi masalah dalam kesehatan reproduksi, karena pada anak yang dilahirkan dapat terjadi masalah fisik, psikologis, dan juga menimbulkan masalah ekonomi bagi suatu negara. Kelahiran prematur merupakan keadaan yang disebabkan oleh banyak faktor yang meliputi faktor genetik dan lingkungan. Hubungan polimorfisme (*single nucleotide polymorphism*, SNP) beberapa gen tertentu diduga berperan penting dalam terjadinya kelahiran prematur. Dalam penelitian ini dilihat hubungan genotip SNP -308(G/A) pada gen tumor nekrosis faktor alfa (*TNF*-α) dan SNP -1082(A/G) pada gen interleukin 10 (*IL-10*) pada kelahiran prematur. Penelitian ini merupakan penelitian kasus kontrol pada 40 ibu hamil dengan kelahiran prematur dan 40 ibu hamil kelahiran normal yang memenuhi kriteria syarat penelitian. Pasien yang bersedia ikut penelitian dilakukan pemeriksaan genotip dengan *real-time polimerase chain reaction* (RT-PCR) dan pemeriksaan kadar sitokin dengan menggunakan teknik *enzyme-link immunosorbont assay* (ELISA), perbedaan distribusi genotipe, dominan dan resessif model dan frekuensi alel dianalisis dengan *Chi-square test*, sedangkan untuk deviasi frekuensi genotipe dari *Hardy-wienberg equlibrium*(HWE) dianalisis menggunakan *Fisher's exact test*.

Penelitian dilakukan di kamar bersalin ruang rawat inap SMF Obstetri dan Ginekologi RSUD Dr. Zainal Abidin di Banda Aceh, sejak 1 januari 2012 sampai juli 20i5. Didapatkan bahwa genotipe GA, dominan model GG dan alel A SNP -380(G/A) TNF-α protektif terhadap kelahiran prematur, tetapi secara statistik tidak bermakna. (OR: 0,32; 95%CI: 0,08-1,33, *p*=0,096), maupun alel (OR: 0,35; 95%CI: 0,09-1,37, *p*=0,105) Nilai rerata sitokin TNF-α dari total sampel yang memiliki genotipe mutan (GA) dengan individu yang memiliki genotipe normal (GG) (5,9 ± 2,7 pg/dL *vs*. 8,1 ± 13,9 pg/dL, *p*=0.612) dan kadar rerata TNF-α antara alel A dan G (juga tidak bermana, secara statistik (*p*=0,105). Selain itu juga tidak terdapat perbedaan bermakna antara kadar IL-10 individu dengan genotipe AA, GA dan GG pada total populasi (masing-masing 7,9 ± 6,9 pg/dl, 4,6 ± 1,0 pg/dl dan 3,9 ± 0,2 pg/dl, *p*=0,293). Analisis pada tingkat dominan, resesif model dan alel juga tidak terdapat perbedaan bermakna kadar IL-10 dengan p masing-masing *p*=0,117, *p*=0,351 dan *p*=0,070. Terdapat hubungan protektif genotip AG, dominan model AA dan alel A, SNP –1082A/G *IL-10* dengan kelahiran prematur, tapi tidak bermakna secara statistik, (OR:0,6; 95%CI: 0,2-2,4, p=0,369), resesif model (OR: 2,0; 95%CI: 0,2-23,6, p=0,500) maupun pada tingkat alel (OR: 0,8; 95%CI: 0,3-2,6, p=0,500). Pada analisis interaksi genotipe SNP –308G/A *TNF*-α dan SNP –1082A/G *IL-10* terdapat hubungan protektif genotip GA-AA dan GG-AG dengan kelahiran prematur, OR,0,42(0,10-1,85), 0,57(0,09-3,63), dan genotipe GG-GG sebagai faktor risiko kelahiran prematur,OR, 1,70(0,09-3,63), tapi tidak bermakna secara statistik.

Kata kunci: kelahiran prematur, SNP,IL-10-1082(A/G), TNF-α-308(G/A), polimorfisme

ABSTRACT

Premature birth remains the main problem in reproductive health, because the child is born may occur physical problems, psychological, and also pose a problem for the economy of a country. Premature birth is a condition that is caused by many factors including genetic and environmental factors. Relations polymorphisms *(single nucleotide polymorphism,* SNP) some particular gene thought to play an important role in the occurrence of premature birth. In this study the relationship seen SNP genotyping - 308 (G / A) in the genes of tumor necrosis factor-alpha *(TNF* -α) and SNP -1082 (A / G) in the gene interleukin 10 *(IL-10)* in premature birth. This study is a case-control study on 40 pregnant women with preterm birth and normal birth 40 pregnant women who meet the requisite criteria for the study. Patients who are willing to join the study examined genotyping by *real-time polymerase chain reaction* (RT-PCR) and examination of cytokine levels by using the technique of *enzyme-linked immunosorbont assay* (ELISA), differences in the distribution of genotypes, dominant and resessif model and allele frequency was analyzed by *Chi - Square test,* while for the genotype frequency deviation from *Hardy-wienberg equlibrium* (HWE) were analyzed using *Fisher's exact test.*

This study was conducted in the delivery room inpatient unit SMF Obstetrics and Gynecology Hospital Dr. Zainal Abidin Banda Aceh, since 1 January 2012 until July 20i5.It was found that the genotype GA, the dominant model of GG and allele A of SNP -380 (G/A) TNF-α protective of preterm birth, but was not statistically significant. (OR: 0.32; 95% CI: 0.08 to 1.33, $p = 0.096$), and allele (OR: 0.35; 95% CI: 0.09 to 1.37, $p = 0.105$) The Value of the mean cytokine TNF-α of the total sample that had a mutant genotype (GA) with individuals who have a normal genotype (GG) (5.9 ± 2.7 pg / dL *vs.* 8.1 ± 13.9 pg / dL, $p = 0612$) and the levels of mean TNF-α between allele A and G also was not statistically significant *(*$p = 0.105$). In addition, there is no significant difference between the levels of IL-10 individuals with genotype AA, GA and GG in the total population (respectively 7.9 ± 6.9 pg / dl, 4.6 ± 1.0 pg / dl and 3.9 ± 0.2 pg / dl, $p = 0.293$). Analysis on the level of dominant and recessive alleles models Also there are no significant differences in levels of IL-10 with p respectively $p = 0.117$, $p = 0.351$ and $p = 0.070$. There is a relationship protective genotype AG, the dominant model of AA and A alleles, SNP -1082A / G *IL-10* to preterm birth , but was not statistically significant (OR: 0.6; 95% CI: 0.2 to 2.4, p = 0.369), a recessive model (OR: 2.0; 95% CI: 0.2 to 23, 6, p = 0.500) as well as at the level of allele (OR: 0.8; 95% CI: 0.3 to 2.6, p = 0.500). In the analysis of the interaction of genotype SNPs -308G / A *TNF* -α and SNP -1082 A/G *IL-10* protective genotype correlation GA-AA and GG-AG with premature birth, OR, 0.42 (0.10 to 1.85) , 0.57 (0.09 to 3.63), and GG-GG genotype as a risk factor for preterm birth, OR, 1.70 (0.09 to 3.63), but not statistically significant.

Keywords: premature birth, SNP,IL-10-1082(A/G), TNF-α-308 (G/A), polymorphis