ABSTRAK

Pendahuluan. Dermatofitosis kronik karena *Trichophyton rubrum* merupakan mikosis superfisialis yang banyak ditemukan di negeri tropis yang beriklim panas dan lembab seperti Indonesia. Penyakit ini sering kambuh, sukar disembuhkan, mengganggu kualitas hidup, beban ekonomi. Penyakit ini diperkirakan ada hubungan dengan gen yaitu HLA juga mungkin ada pengaruh dari golongan darah.Tujuan penelitian adalah mencari hubungan antara polimorfisme HLA-DR4 ,HLA-DR6 dan golongan darah ABO dalam kaitan risiko terjadinya dermatofitosis karena *T.rubru,* pada masyarakat Samarinda, Indonesia.

Metode. Studi kasus-kontrol, subjek penelitian terdiri 32 kasusdan 55 kontrol (DR4) dan 25 kasus dan 37 kontrol (DR6). Polimorfisme HLA-DR4 dan HLA-DR6 didapat dari isolasi DNA sel-sel limfosit, PCR, elektroforesis gel, purifikasi, kemudian sekuensing DNA, HLA *typing*. Penentuan golongan darah ABO dengan metode agglutinasi *slide test*. Diagnosis dermatofitosis kronik melalui pemeriksaan klinis. Diagnosis Jamur melalui pemeriksaan KOH, kultur agar sabouraud dekstrose (ASD) dan *slide culture.* Analisis statistik dengan *Chi test* atau *Fisher's exact test* (*two -sided*), 95% Interval Konfiden Analisis satitistik signifikan bila $p < 0,05$.

Hasil.SNP HLA-DR4 yang kaitan risiko terjadi dermatofitosis kronik karena *T. rubrum* sebagai berikut: DR4 posisi 3 CC dengan p = 0,004, DR4 posisi 6 GG dengan p = 0,012, DR4 posisi 7 CT dengan p = 0,001, DR4 posisi 9 AG dengan p = 0,031, DR4 posisi 9 AC dengan p = 0,023(fisher), DR4 posisi 12 CT dengan p = 0,026, DR4 posisi 13 TT dengan p = 0,011(fisher), DR4 posisi 14 GG dengan p = 0,000. Sebagai SNP HLA-DR4 yang lebih resisten terjadi dermatofitosis kronik karena *T. rubrum*, DR4 posisi 3 CT dengan p = 0,041, DR4 posisi 6 GC dengan p = 0,012, DR4 posisi 8 GT dengan p = 0,036, DR4 posisi 14 GT dengan p = 0,001.Sebagai SNP HLA-DR6 yang lebih resisten terjadi dermatofitosis karena *T. rubrum*, DR6 posisi 3 GC dengan p = 0,014(fisher), DR6 posisi 4 TT dengan p = 0,005(fisher), DR6 posisi 7 TT dengan p = 0,013 (Chi-square).Polimorfisme HLA-DR4 dan HLA-DR6 posisi-posisi tersebut diatas berhubungan dengan kerentanan dan resistensi terhadap terjadinya dermatofitosis kronik karena *T.rubrum.*Tidak terdapat hubungan antara golongan darah ABO (DR4) dengan kasus sebagai faktor risiko terjadinya dermatofitosis karena *T.rubrum.*Tidak terdapat hubungan antara golongan darah ABO (DR6) dengan kasus sebagai faktor risiko terjadinya dermatofitosis kronik karena *T .rubrum*.

Kesimpulan: Penemuan ini menunjukan bahwa Efek HLA gen pada kromosum 6 HLA-DR4(DRB1*4) exon 2 dan HlA-DR6 (DRB1*13) exon 2 memegang peranan penting dalam terjadinya dermatofitosis kronik karena *T. rubrum*. Khusus Efek ABO didalam hubungan antara golongan darah dengan kasus dermatofitosis kronik karena *T.rubrum* .Pendekatan melalui kultur agar sabouraud dektrose (ASD) dan membutuhkan sampel yang lebih besar . Peranan antigen H sebagai faktor risiko pada golongan darah O perlu dipelajari lebih lanjut.

Kata kunci: Dermatofitosis kronik, *T. rubrum*, polimofisme HLA-DR4, HLA-DR6, ABO, Antigen H.

ABSTRACT

Introduction. Chronic dermatophytosis caused by *Trichophyton rubrum* is a superfisialis mycosis more found in tropical countries with hot and humid climate like Indonesia. It is chronic recidive disease and not easy to cure, affect the quality of life and influence economic problem. The disease is certainly related to the gene as HLA through CMI and possibility influence by ABO system, therefore the aim of this study is how to find the association between HLA-DR4 and HLA-DR6 polymorphisms with ABO blood group as risk factors to develope chronic dermatophytosis caused by *T.rubrum* in Samarinda citizen,Indonesia.

Method. Cases and controls study, as subject of this research included 32 cases and 55 controls(DR4) and 25 cases and 37 controls(DR6). Polymorfisms of HLA-DR4 and HLA-DR6 were obtained from DNA isolation of lymphocyte cells, PCR, gel electrophoresis,DNA purification, DNA sequencing and HLA typing. Aglutination method of slide test was used for ABO phenotype identification. Clinical examination for chronic dermatophytosis diagnoses. Mycological procedures included KOH examination, SDA culture and slide culture. Statistic analysis with *Chi test* or *Fisher's exact test* (*two -sided*), 95% Confidence Interval. Statistic analysis significan if $p < 0,05$.

Result.SNPs HLA-DR4 were found as risks for chronic dermatophytosis caused by *T.rubrum* as follow: DR4 postion 3 CC with p=0.004 ,DR4 position 6 GG with p=0.012,DR4 position 7 CT with p=0.001,DR4 position 9 AG with p= 0.031,DR4 position 9 AC with p=0.023(fisher),DR4 position 12 CT with p=0.026,DR4 position13 TT with p=0.011(fisher),DR4 position 14GG with p=0.000.SNPs HLA-DR4 were associated with resistence to chronic dermatophytosis caused by *T.rubrum*, DR4 position 3 CT with p= 0.041, DR4 position 6 GC with p = 0.012, DR4 position 8 GT with p=0.036,DR4 position 14 GT with p=0,001.SNPs HLA-DR6 were more resistence to chronic dermatophytosis caused by *T. rubrum*, DR6 position 3 GC with p=0,014 (fisher), DR6 position 4 TT with p = 0.005(fisher), DR6 position 7 TT with p = 0.013 (Chi-square) **.**These findings suggest that genes on the chromosome 6 HLA class II region played important rule in the development of chronic dermatophytosis caused by *T.rubrum.*SNP HLA-DR4 and HLA-DR6 polymorphism at the above positions were associated with risk or resistence in the development of chronic dermatophytosis caused by *T. rubrum.*There was no association between ABO (DR4) blood group with cases as risk factors in the development of chronic dermatophytosis caused by *T.rubrum*. There was no association between ABO (DR6) blood group with cases as risk factors in the development of chronic dermatophytosis caused by *T.rubrum*.

Conclusion: These findings suggest that HLA effects on genes HLA –DR4 (DB1*4) exon 2 and HlA-DR6(DB1*13) exon 2 played important rules in the development of chronic dermatophytosis caused by *T.rubrum*.Special for ABO effects in the association between ABO blood group with cases in the development of chronic dermatophytosis caused by *T.rubrum.* The approach through Saubouraud Dextrose Agar (SDA) culture and need more samples. The influences of antigen H as risk factor on O blood group need futher study.

Key word: Chronic dermatophytosis**,** *T. rubrum*, HLA-DR4 and HLA-DR6 polymorphism, ABO.Antigen H.