

DISERTASI

**HUBUNGAN *C REAKTIVE PROTEIN*, INTERLEUKIN-6 DAN POLIMORFISME
PROMOTOR GEN INTERLEUKIN-6-174G/C Alele PADA JENIS APENDISITIS ANAK
NON PERPORASI DAN PERPORASI**



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ABSTRAK

HUBUNGAN *C REACTIVE PROTEIN*, INTERLEUKIN-6 DAN POLIMORFISME PROMOTOR GEN INTERLEUKIN-6-174G/C Alele PADA JENIS APENDISITIS ANAK NON PERFORASI DAN PERFORASI

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Faktor genetik penting dalam kecenderungan seseorang dapat mengalami apendisitis terutama pada anak. Salah satu promotor gen yang mempengaruhi kecenderungan tersebut adalah polimorfisme promotor gen interleukin -6 174 G/C alel. Gen ini berfungsi sebagai stimulus melalui interleukin -6 kepada megakariosit guna meningkatkan agregat platelet dan trombosis lokal juga pada hepatosit dengan mengeluarkan CRP sehingga menyebabkan disfungsi endotel kedua proses tersebut mengakibatkan terjadinya iskemia, gangren pada dinding apendiks veriformis sehingga terjadi perforasi.

Penelitian ini merupakan penelitian observasional dengan desain *cross sectional comparative study*. Pengambilan sampel dengan *consecutive sampling* terhadap pasien apendisitis anak perforasi dan non perforasi yang datang berobat melalui unit gawat darurat RS Arifin Akhmad Pekanbaru Riau. Kasus adalah subjek masyarakat Riau penderita apendisitis anak perforasi sebanyak 15 orang dengan kontrol apendisitis non perforasi sebanyak 15 orang. Tahapan penelitian adalah pengumpulan sampel, isolasi DNA, PCR, amplifikasi metode direct sequencing dan analisis.

Hasil penelitian ini didapatkan umur terbanyak yakni usia lebih 5 tahun dengan jumlah laki laki lebih banyak dibandingkan wanita, pada kontrol dan perempuan lebih banyak sedikit dibandingkan laki laki pada apendisitis perforasi. Kelompok apendisitis perforasi didapatkan 93% memiliki polimorfisme promotor gen IL-6 174 G/C alel G dan 7% pada alel G dan C sedangkan pada apendisitis non perforasi 100% pada alel G. Kelompok apendisitis anak perforasi dan non perforasi berdasarkan jumlah leukosit uji statistik diperoleh $p < 0,01$. Kelompok apendisitis anak perforasi dan non perforasi berdasarkan konsentrasi neutrofil uji statistik diperoleh $p < 0,01$. Kelompok apendisitis anak perforasi dan non perforasi berdasarkan kadar CRP uji statistik $p < 0,01$. Kelompok apendisitis anak perforasi dan non perforasi konsentrasi interleukin -6 uji statistik $p > 0,05$.

Hasil penelitian ini dapat disimpulkan bahwa terdapatnya polimorfisme promotor gen interleukin -6 174 G/C alel pada jenis apendisitis anak baik perforasi dan non perforasi, terdapat hubungan bermakna kadar leukosit, neutrofil dan CRP antara apendisitis perforasi dan non perforasi, tidak terdapat hubungan bermakna konsentrasi interleukin -6 antara jenis apendisitis anak perforasi dan non perforasi, namun cenderung meningkat pada perforasi.

Kata kunci : Apendisitis anak, polimorfisme promotor gen IL-6 174, IL-6, CRP

ABSTRACT

The Correlation c reactive protein, interleukin-6 and polymorphism promoter gene interleukin-6 174 G/C allele type of child appendicitis perforated and non perforated

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Genetic factor is an important in tendency of individual can suffer appendicitis especially in children. One of genes affecting the tendency is interleukin -6 174 G/C allele rs1800795 gene. This gene has functioned as stimulant through interleukin-6 to megakaryocyte in order to increase aggregate platelets number, local trombosis and hepatocyte by releasing CRP, then caused endothelium disfunction. Both of the processes caused occurrence of ischemia and gangrene on appendix veriformis's wall and then perforated.

This research is observational research with cross sectional comparative study. Sample taking used consecutive sampling on perforating pediatric appendicitis and non perforating patients who admitted in Arifin Achmad Hospital Pekanbaru Riau through emergency unit. The case is subject Riau society involving 15 perforating pediatric appendicitis patients and 15 non perforating pediatric appendicitis patients as control. The phases of research are collecting sample, isolating DNA, primer designing, PCR, amplification of direct sequencing method and analysis.

The result of the study found that the most patients on aged more than 5 years old with the frequency of male are more than female in the control, with female are less than male in perforating appendicitis group. Group of perforating appendicitis was found 93% of them owning IL-6 174 G/C allele G polymorphism gene and 7% had allele G and C, while in non perforating appendicitis group was 100% had allele G. Both of groups statistically based on neutrophil level and CRP was meaningful ($p < 0,01$), but the interleukin-6 level was $p > 0,05$ in both of groups.

This result can be concluded that interleukin-6 174 G/C allele polymorphism gene was associated in pediatric appendicitis with perforation and non perforation groups, there was significant correlation between leukocyte, neutrophil and CRP levels in both of groups, but there is no significant correlation between in interleukin-6 levels in both of groups, but it has to tend increase on perforation

Keywords : Pediatric Appendicitis. IL-6 174 Polymorphisme Promotor Gene, IL-6, CRP