

ABSTRAK

Perbedaan Kadar Biomarker Penanda Infeksi Terkait Pemberian Antibiotik Profilaksis pada Pemasangan Alat Elektronik Kardiovaskular Implan

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Latar belakang: Infeksi terkait ALEKA merupakan komplikasi yang serius, sedangkan 12-25% infeksi ALEKA bersifat subklinis. Biomarker penanda infeksi yang sensitif & spesifik dapat digunakan untuk mendeteksi infeksi subklinis. Pencegahan infeksi ALEKA dengan antibiotik profilaksis *post* implantasi masih menimbulkan kontroversi. Penelitian ini bertujuan untuk mengetahui perbedaan kadar biomarker penanda infeksi pada pasien implantasi ALEKA yang mendapatkan antibiotik profilaksis *pre* dan *durante* implantasi dibandingkan dengan *pre*, *durante*, dan *post* implantasi.

Metode: Penelitian ini merupakan *double blind* RCT dengan subjek pasien yang dilakukan implantasi APJP. Grup perlakuan mendapatkan antibiotik profilaksis *ampicillin sulbactam* 1.5 gram IV 1 jam *pre* insisi & 1.5 gram *intrapocket*, sedangkan grup kontrol mendapatkan tambahan *ampicillin sulbactam* 1.5 gram IV per 12 jam selama 3 hari *post* implantasi. Presepsin, IL-6, dan procalcitonin digunakan sebagai biomarker penanda infeksi. Kadar biomarker diukur 1 hari *pre* implantasi dan 24 jam *post* implantasi untuk mendapatkan nilai delta.

Hasil: Sebanyak 59 pasien memenuhi kriteria inklusi & eksklusi, grup perlakuan terdiri dari 27 pasien dan grup kontrol 32 pasien. Nilai median delta kadar presepsin -12.2 pg/mL pada grup perlakuan dan -9.9 pg/mL pada kontrol. Median delta IL-6 -0.9 pg/mL pada grup perlakuan dan -0.3 pg/mL pada kontrol. Median delta procalcitonin pada grup perlakuan dan kontrol sama, yaitu -0.02 ng/mL. Uji Mann-Whitney menunjukkan tidak terdapat perbedaan bermakna antara delta kadar presepsin, IL-6, dan procalcitonin grup perlakuan dengan kontrol.

Kesimpulan: Tidak terdapat perbedaan kadar biomarker penanda infeksi antara pasien implantasi ALEKA yang mendapatkan antibiotik profilaksis *pre* dan *durante* implantasi dengan *pre*, *durante*, dan *post* implantasi.

Kata kunci: Infeksi ALEKA, biomarker infeksi, presepsin, IL-6, procalcitonin

ABSTRACT

Differences of Biomarker Levels related to Prophylactic Antibiotic Administration in Cardiac Implantable Electronic Devices Implantation

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Background: *Infection is a serious complication of CIED implantation, meanwhile 12-25% of CIED infections (CIEDI) are subclinical. Therefore, highly sensitive & specific biomarker for infection can be used in those conditions. Postprocedural prophylactic antibiotic to prevent CIEDI is still controversial. This study aimed to know differences of biomarker levels in CIED patients who got pre- and intraprocedural prophylactic antibiotics compared to pre-, intra-, and postprocedural antibiotics.*

Methods: *The subjects of this double blind RCT study were patients who got permanent pacemaker (PPM) implantation. Subjects in intervention group had prophylactic antibiotic ampicillin sulbactam 1.5 gram IV 1 hour pre- and intraprocedure, whereas subjects in control group got additional ampicillin sulbactam 1.5 gram IV twice a day for 3 days after implantation. Presepsin, IL-6, and procalcitonin were used as infection biomarkers. Biomarkers were analyzed 1 day before and 24 hour after implantation to get the delta value.*

Results: *Fifty nine subjects were eligible for this study, 27 subjects were randomized into intervention group and 32 into control. Median value of delta presepsin were -12.2 pg/mL in intervention & -9.9 pg/mL in control, IL-6 were -0.9 pg/mL in intervention & -0.3 pg/mL in control, and procalcitonin were -0.02 ng/mL in intervention as well as in control. Mann-Whitney test showed no differences between delta presepsin, IL-6, and procalcitonin in intervention and control group.*

Conclusion: *There were no significant differences in biomarker level between CIED patients who got pre- & intraprocedural prophylactic antibiotics compared to pre-, intra-, and postprocedural antibiotics.*

Keywords: *CIED infection, infection biomarker, presepsin, IL-6, procalcitonin*