

## Faktor Risiko Infeksi Bakteri pada Anak Pascatransplantasi Hati: Sebuah Studi Preliminary = Risk Factors for Bacterial Infection in Children Following Liver Transplantation: A Preliminary Study

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### Abstrak

Angka kesintasan dan kualitas hidup anak dengan penyakit hepatobilier kronik meningkat seiring dengan berkembangnya transplantasi hati. Insidens infeksi bakteri 36–79% pada 6 bulan pascatransplantasi dan mortalitasnya 3,0–10,6% pada 3 bulan pascatransplantasi. Pencegahan infeksi bakteri yang adekuat akan menurunkan angka morbiditas dan mortalitas serta meningkatkan kesintasan pasien. Penelitian ini bertujuan untuk mengetahui faktor risiko infeksi bakteri pada anak pascatransplantasi hati di Indonesia. Penelitian kohort retrospektif ini melibatkan pasien anak pascatransplantasi hati di RSUPN Dr. Cipto Mangunkusumo (RSCM) mulai Desember 2010 s/d April 2023 dengan metode total sampling. Subjek dibagi menjadi kelompok infeksi bakteri dan tanpa infeksi bakteri. Prevalens infeksi bakteri dari 63 subjek penelitian ini adalah 84,13%. Infeksi bakteri didominasi oleh hospital acquired infection (HAI) berupa infeksi daerah operasi (29,63%), ventilator-associated pneumonia (14,81%), dan catheter-related urinary tract infection (13,58%). Angka mortalitas terkait infeksi bakteri adalah 12,70%. Analisis multivariat menunjukkan lama rawat ICU 20 hari (RR 1,212, IK 95% 1,028 1,426,  $p = 0,022$ ) dan volume kehilangan darah selama operasi 70 mL/kg (RR 1,283, IK 95% 1,009 1,631,  $p = 0,042$ ) adalah faktor risiko infeksi bakteri pascatransplantasi hati. Besar post-hoc power dari masing-masing uji hipotesis yang digunakan adalah 5,0771,50%. Hasil analisis subgroup menunjukkan lama rawat ICU 20 hari memiliki risiko 2,479 kali lebih besar untuk mengalami infeksi bakteri multi-drug resistance (IK 95% 1,185 – 5,187,  $p = 0,016$ ). Sebagai kesimpulan, prevalens infeksi bakteri pada anak dalam kurun waktu 0–6 bulan pascatransplantasi hati di RSCM adalah sebesar 84,13%, dengan faktor risiko berupa lama rawat ICU 20 hari dan volume kehilangan darah selama operasi 70 mL/kg. Penelitian lanjutan dengan desain lebih baik dan subjek lebih banyak diperlukan.

.....Survival rate and quality of life of children with chronic hepatobiliary disease has improved since the development of liver transplantation. Incidence of bacterial infection is 36–79% at 6 months post-transplantation and mortality of 3.0–10.6% at 3 months post-transplantation. Adequate prevention of bacterial infection will reduce morbidity and mortality and increase survival. This study aimed to determine the risk factors for bacterial infection in children who underwent liver transplantation in Indonesia. This retrospective cohort study includes pediatric recipients who underwent liver transplantation in Cipto Mangunkusumo Hospital (CMH) during December 2010 – April 2023 with total sampling method. Subjects were classified into groups with and without bacterial infection. Prevalence of bacterial infection of the 63 subjects was 84.13%. A majority of the bacterial infection cases were hospital-acquired infections (HAIs), comprising of surgical site infections (29.63%), ventilator-associated pneumonia (14.81%), and catheter-related urinary tract infections (13.58%). Multivariate analysis showed ICU length of stay 20 days (RR 1.212; CI 95% 1.028 1.426;  $p = 0.022$ ) and volume of blood loss volume during surgery 70 mL/kg (RR 1.283; CI 95% 1.009 1.631;  $p = 0.042$ ) were risk factors risk factors for bacterial infection following liver transplantation. Post-hoc power of each hypothesis test was 5.0771.50%. Subgroup analysis presented ICU length of stay 20 days increased risk of multi-drug resistance bacterial infection by 2.479 times (CI 95%

1.185 – 5.187;  $p = 0.016$ ). Conclusions, Bacterial infection prevalence at six-months post-liver transplantation of children in CMH was 84.13% with ICU length of stay 20 days and volume of blood loss volume during surgery 70 mL/kg as risk factors. Further studies with better design and more participants are needed.