

# Perbandingan hasil penutupan defek septum atrium sekundum antara transkateter menggunakan amplatzer septal occluder dengan pembedahan = Comparison of secundum atrial septal defect closure between transcatheter closure using amplatzer septal occluder with surgery

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## Abstrak

Latar Belakang. Terapi pembedahan telah menjadi baku emas dalam penutupan defek septum atrium (DSA) sekundum. Prosedur pembedahan mempunyai morbiditas yang terkait dengan torakotomi, pintasan jantung paru, komplikasi prosedur, jaringan parut bekas operasi, dan trauma psikologis. Oleh karena itu, timbul usaha pendekatan transkateter untuk menutup DSA yang bersifat relatif kurang invasif, salah satunya dengan alat Amplatzer septal occluder (ASO).

Tujuan. Mengetahui perbandingan hasil penutupan DSA sekundum, komplikasi prosedur, lama rawat di rumah sakit, dan total biaya prosedur antara prosedur transkateter menggunakan ASO dengan prosedur pembedahan.

Metode. Penelitian bersifat retrospektif analitik dengan sumber data berupa rekam medis pasien anak dengan DSA sekundum yang datang berobat ke Pelayanan Jantung Terpadu Rumah Sakit dr. Cipto Mangunkusumo dan dilakukan penutupan defek dengan salah satu prosedur dalam periode Januari 2005-Desember 2011.

Hasil. Sebanyak 112 kasus anak dengan DSA sekundum masuk dalam penelitian, terdiri dari 70 kasus dengan prosedur pembedahan dan 42 kasus dengan prosedur transkateter. Prosedur pembedahan dan prosedur transkateter mempunyai tingkat keberhasilan yang serupa (98,6% vs 95,2%,  $p=0,555$ ). Namun prosedur pembedahan mempunyai komplikasi yang lebih banyak dibandingkan prosedur transkateter (60% vs 28,6%,  $p=0,001$ , OR 1,61;95%IK,1,19-2,18). Prosedur pembedahan juga mempunyai lama rawat di rumah sakit yang lebih panjang dibandingkan prosedur transkateter (6 hari vs 2 hari,  $p<0,0001$ ), dan semua prosedur pembedahan membutuhkan perawatan di ruang rawat intensif. Secara keseluruhan prosedur transkateter mempunyai total biaya prosedur yang lebih tinggi dibandingkan prosedur pembedahan (Rp.52.731.680,06 vs Rp.46.994.745,26,  $p<0,0001$ ), dan biaya pengadaan alat ASO mempunyai porsi sekitar 58% dari total biaya prosedur. Analisis total biaya prosedur tanpa memperhitungkan biaya alat ASO menunjukkan prosedur transkateter mempunyai total biaya yang lebih rendah dibandingkan prosedur pembedahan.

Simpulan. Prosedur transkateter dengan ASO mempunyai efektivitas yang sama dengan prosedur pembedahan dalam penutupan DSA sekundum dan mempunyai komplikasi yang lebih sedikit serta lama rawat di rumah sakit yang lebih pendek. Total biaya prosedur transkateter dengan ASO masih lebih tinggi dibandingkan prosedur pembedahan.

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Background. Surgery has become standard therapy for secundum atrial septal defect (ASD) closure, but it has significant morbidity related to sternotomy, cardiopulmonary bypass, complication, residual scar, and trauma. Non-surgical and less invasive approaches with transcatheter device were developed to occlude

ASD. Amplatzer septal occluder (ASO) is one of the commonly used devices in transcatheter closure.

**Objectives.** This study sought to compare efficacy, complication, length of hospital stay, and total cost of secundum ASD closure procedure between transcatheter closure using ASO with surgery.

**Methods.** A retrospective analysis was performed on children with secundum ASD admitted to Cardiology Center of Cipto Mangunkusumo Hospital from January 2005-December 2011. The patients received transcatheter closure with ASO or surgical closure. Data were obtained from medical record.

**Results.** A total of 112 secundum ASD cases were included in study, consisted of 42 cases underwent transcatheter closure and 70 cases underwent surgical closure. The efficacy of both procedures were not statistically different (98.6% vs 95.2%,  $p=0.555$ ). However, surgery procedure had more complication than transcatheter closure (60% vs 28.6%,  $p=0.001$ , OR 1.61;95%CI 1.19 to 2.18). Hospital stay were also significantly longer for surgery procedure than transcatheter closure (6 days vs 2 days,  $p<0.0001$ ), and all surgical subjects requiring intensive care. Transcatheter closure had mean total cost Rp.52,731,680.06 as compared with Rp.46,994,745.26 for surgery procedure ( $p<0.0001$ ), and cost of ASO represents 58% of the total cost of transcatheter closure. Mean total cost of transcatheter closure without including cost of device is less costly than surgery procedure.

**Conclusion.** Transcatheter closure using ASO had similar efficacy with surgical closure, complication rate was lower, and the length of hospital stay was shorter. However, transcatheter closure costs were higher compared with surgery procedure.