

# Patensi Satu Tahun Single Balloon Angioplasty pada Stenosis Draining Vein Fistula Arteriovenosa Brakiosefalika dan Faktor-Faktor yang Mempengaruhinya = One-Year Patency of Single-Balloon Angioplasty in Arteriovenous Fistula Draining Vein and Its Related Risk Factors

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## Abstrak

Latar Belakang: Akses vaskular adalah jalur kehidupan bagi pasien hemodialisis. National Kidney Foundation Dialysis Outcome Quality Initiative (NKF-KDOQI) menyatakan bahwa fistula arteriovenosa (FAV) adalah akses vaskular terbaik. Stenosis dan kegagalan maturasi FAV merupakan masalah akses hemodialisa terbanyak. Terapi endovaskular menjadi salah satu solusi dalam mengatasi masalah ini yaitu percutaneous balloon angioplasty (PTA), tetapi prosedur ini memiliki biaya yang cukup tinggi. Di Indonesia sendiri, sulit untuk bisa melakukan prosedur standard percutaneous balloon angioplasty sehingga lebih sering dilakukan prosedur PTA dengan menggunakan single balloon angioplasty, tetapi long-term patency prosedur ini belum diketahui. Penelitian ini bertujuan untuk mengetahui patensi satu tahun dari tindakan single balloon angioplasty pada pasien stenosis draining vein fistula arteriovenosa brakiosefalika.

Metode: Penelitian ini merupakan studi kohort retrospektif analitik menggunakan rekam medis di RSUPN Cipto Mangunkusumo dan RS Hermina Bekasi. Variabel bebas hipertensi, diabetes mellitus, derajat stenosis, jumlah stenosis, restenosis, ukuran balon, tekanan balon, residual stenosis, lama pembuatan FAV sedangkan variabel terikat adalah patensi 1 tahun tindakan single balloon angioplasty pada stenosis juxta-dan draining vein fistula arteriovenosa brakiosefalika.

Hasil: Dari 62 pasien dengan stenosis draining vein FAV brakiosefalika, didapatkan angka patensi 6 bulan dan 1 tahun pascatindakan single balloon angioplasty sebesar 33 subjek (53,2%) dan 20 subjek (32,3%). Ditemukan bahwa faktor usia FAV (lama sejak pembuatan FAV hingga stenosis) berpengaruh terhadap patensi 1 tahun paska single balloon angioplasty. Didapatkan median (min-maks) dari subjek yang tidak paten sebesar 4 bulan (1 bulan-9 bulan), sedangkan yang paten sebesar 9,5 bulan (5 bulan-36 bulan) ( $p=0,000$ ).

Kesimpulan: Angka patensi tindakan single balloon angioplasty pada pasien stenosis fistula arteriovenosa brakiosefalika dalam 6 bulan dan 1 tahun sebesar 53,2% dan 32,3% berturut-turut. Terdapat perbedaan lama sejak pembuatan FAV hingga stenosis yang bermakna antara kelompok yang paten selama 1 tahun dengan yang tidak paten pasca tindakan single balloon angioplasty pada stenosis fistula arteriovenosa brakiosefalika.

.....Background: Vascular access is the lifeline for hemodialysis patients. The National Kidney Foundation Dialysis Outcome Quality Initiative (NKF-KDOQI) states that an arteriovenous fistula (AVF) is the best vascular access due to its high success rate and low complication rate. However, stenosis and maturation failure of an AVF are common. Endovascular therapy, namely percutaneous balloon angioplasty (PTA), is a solution to treat this problem. however, this procedure is quite costly. In Indonesia, it is difficult to perform

standard percutaneous balloon angioplasty; thus, PTA procedures are more commonly performed using single balloon angioplasty technique. However, the long-term patency of such procedure is unknown. The aim of this study was to determine the one-year patency of single balloon angioplasty in patients with draining vein stenosis in brachiocephalic arteriovenous fistula.

**Methods:** This study is an analytic retrospective cohort using medical records at Cipto Mangunkusumo General Hospital and Hermina Hospital Bekasi. The independent variables were hypertension, diabetes mellitus, degree of stenosis, number of stenosis, restenosis, balloon size, balloon pressure, residual stenosis, duration of fistula creation. The dependent variable was a 1-year patency of single balloon angioplasty in juxta and draining vein stenosis of brachiocephalic arteriovenous fistula.

**Results:** Out of 62 patients with draining vein stenosis of brachiocephalic AVF, 6 months and 1 year of patency after single-balloon angioplasty were 33 (53.2%) and 20 subjects (32.3%), respectively. Age of the fistula, namely the duration from the arteriovenous fistula creation until stenosis, had a statistically significant influence on 1-year patency after single balloon angioplasty. By using numerical data from the length of the month of fistula creation, the median (min-max) of the non-patent subjects was 4 months (1 month-9 months), while the patent ones was 9.5 months (5 months - 36 months) ( $p=0.000$ ).

**Conclusion:** The patency rates of single balloon angioplasty in patients with draining vein stenosis of brachiocephalic arteriovenous fistula at 6 months and 1 year were 53.2% and 32.3%, respectively. There was a significant difference in the length of time from arteriovenous fistula creation to stenosis between the patented group for 1 year and the non-patent group after single balloon angioplasty in draining vein stenosis of brachiocephalic arteriovenous fistula.