QUOI DE NEUF DANS LES ABORDS VASCULAIRES?

EN RADIOLOGIE INTERVENTIONNELLE

Dr Denis HENROTEAUX
Liège- Belgique

CVIR Vol 46(9) 1115-1202

Cardiovasc Intervent Radiol (2023) 46:1115–1116
https://doi.org/10.1007/s00270-023-03519-6

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EDITORIAL VENOUS INTERVENTIONS

Dialysis Access Creation and Management: A Clinical Paradigm

Kiang Hiong Tay[1] · Scott O. Trerotola[2] · Bien Soo Tan[1]

Cardiovasc Intervent Radiol (2023) 46:1125–1135
https://doi.org/10.1007/s00270-023-03440-y

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REVIEW VENOUS INTERVENTIONS

Management of Immature Arteriovenous Fistulas

Jinoo Kim[1] · Yohan Kwon[1] · Tae Won Choi[1] · Je Hwan Won[1]

Cardiovasc Intervent Radiol (2023) 46:1136–1143
https://doi.org/10.1007/s00270-023-03441-x

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REVIEW VENOUS INTERVENTIONS

Dialysis Access Maintenance: Plain Balloon Angioplasty

Lakshmi Ratnam[1,2] · Narayan Karunanithy[3,4] · Leto Mailli[1,2] · Athanasios Diamantopoulos[3,4] ·
Robert A. Morgan[1,2]

Cardiovasc Intervent Radiol (2023) 46:1144–1153
https://doi.org/10.1007/s00270-023-03497-9

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REVIEW VENOUS INTERVENTIONS

The Role of Drug-Coated Balloon in Haemodialysis Arteriovenous Fistula Stenosis Management

Kun Da Zhuang[1] · Farah Gillan Irani[1] · Apoorva Gogna[1] · Chow Wei Too[1] ·
Bien Soo Tan[1] · Kiang Hiong Tay[1]

Cardiovasc Intervent Radiol (2023) 46:1154–1161
https://doi.org/10.1007/s00270-023-03389-y

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REVIEW VENOUS INTERVENTIONS

Hemodialysis Access Stent Graft Trials: Past, Present, and Future

Ziv J Haskal[1] · Bart L. Dolmatch[2]

Cardiovasc Intervent Radiol (2023) 46:1162–1167
https://doi.org/10.1007/s00270-023-03434-w

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REVIEW VENOUS INTERVENTIONS

Management of Thrombosed Dialysis Access Circuits

Geert Maleux[1,2]

Cardiovasc Intervent Radiol (2023) 46:1168–1181
https://doi.org/10.1007/s00270-023-03462-6

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REVIEW

Dialysis Access-Associated Steal Syndrome and Management

Jordan B. Stoecker[1] · Xin Li[2] · Timothy W. I. Clark[2,3] · Mark P. Mantell[1] ·
Scott O. Trerotola[2] · Ansar Z. Vance[2,3]

Cardiovasc Intervent Radiol (2023) 46:1182–1191
https://doi.org/10.1007/s00270-023-03461-7

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REVIEW

Management of Central Venous Stenoses and Occlusions

Panagiotis Kitrou[1,2] · Konstantinos Katsanos[1,2] · Dimitrios Karnabatidis[1,2]

Cardiovasc Intervent Radiol (2023) 46:1192–1202
https://doi.org/10.1007/s00270-023-03380-7

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REVIEW

Surgical Referral for Hemodialysis Access Maintenance

Xin Li[1] · Mark D. Mantell[2] · Scott O. Trerotola[1]

JVA 2023 Vol 24(5) 1084-1090

Original research article

JVA The Journal of Vascular Access

The Journal of Vascular Access
2023, Vol. 24(5) 1084–1090

DOI: 10.1177/11297298211067848
journals.sagepub.com/home/jva
SAGE

Cephalic arch stenosis in the arteriovenous fistula: A retrospective analysis of predisposing factors

Cameron Thomas Burnett[1], Gemma Nicholls[1], Amy Swinbank[1], Ian Hughes[2] and Thomas Titus[1]

Single center retrospective case control

- Simple univariate analysis
- Categorical varaible compared using Fisher's exact test
- Continous variable using a two sample *t*-test
- Log-Rank test
- HR estiomated by Cox proportional hazards analysis

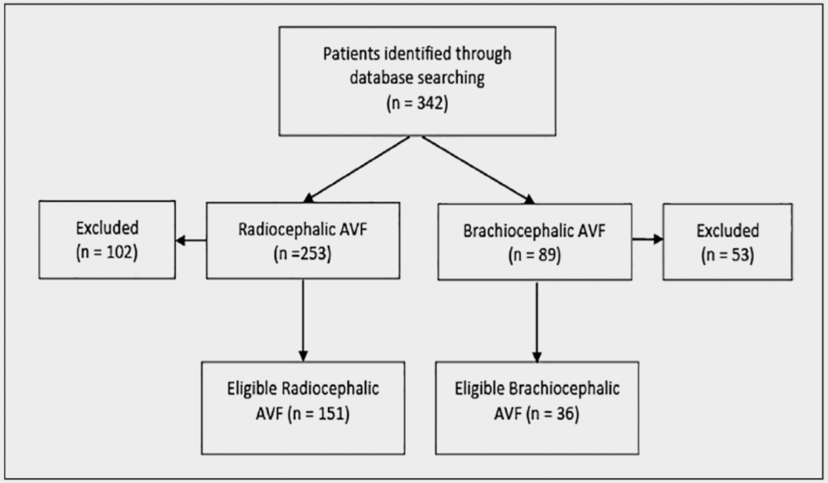


Figure 1. Patient recruitment.
Flow chart demonstrating total number of patients identified as 342. Of the 253 radiocephalic AVFs, 102 were excluded, with a remaining 151 eligible radiocephalic AVFs. Of 89 identified brachiocephalic AVFs in the database, 53 were excluded, with a remaining 36 eligible for retrospective analysis.

JVA 2023 Vol 24(5) 1084-1090

- Gender
- HTA
- Diabetes
- Malignancy
- Smoking status
- Prior permacath
- Age at time of creation
- Identification of thrombus in the access circuit
- Nb of intervention to improve patency of AVF
- Mean width of anastomosis
- Flow rate of AVF

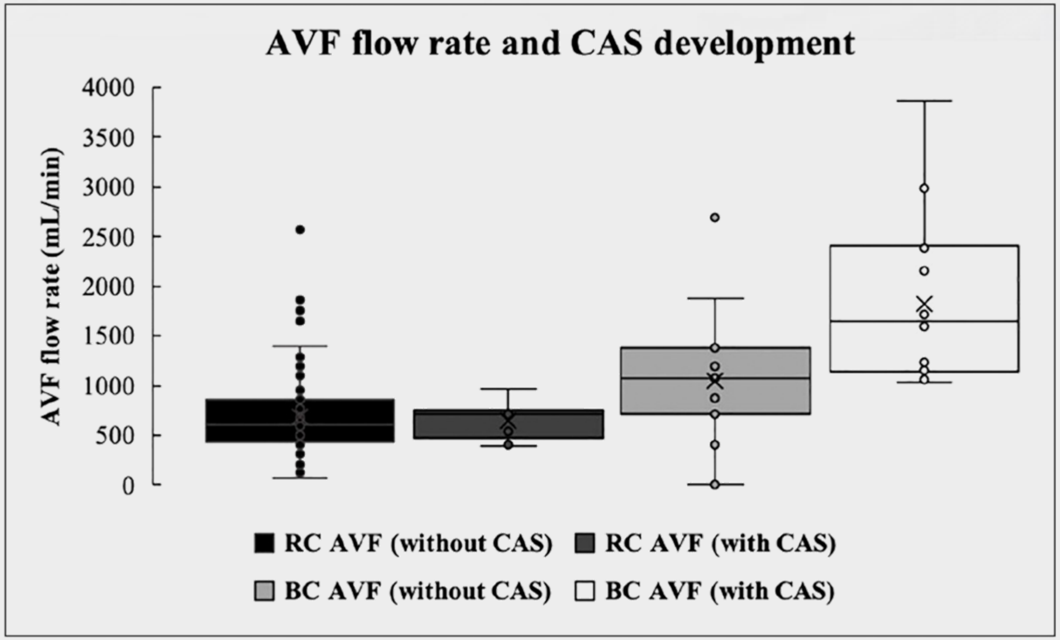
Table 1. Baseline characteristics of brachiocephalic AVF with and without CAS.

	No CAS ($n = 14$)	CAS ($n = 22$)	p
Age	59	64	
Age of fistula (mean)	6 years 52 days	4 years 317 days	0.27
Gender (male)	43%	64%	0.31
Hypertension (%)	93%	82%	0.63
Diabetes (%)	57%	45%	0.73
Smoking history (%)	42%	52%	0.72
Thrombus in fistula (%)	7%	59%	0.002
VTE elsewhere (%)	7%	18%	0.63
Malignancy (%)	21%	41%	0.29
Permacath history (%)	46%	55%	0.73
Mean width of AVF (mm)	4.8	4.5	0.70

JVA 2023 Vol 24(5) 1084-1090

- Flow in brachio-cephalic AVF with CAS > flow in brachio-cephalic AVF without CAS
- No difference in radio-cephalic AVF group

Analysis of predominant outflow at the antecubital fossa: 55% of RC-AVF with CAS (5/9) compared with 26% (38/145) of their non–CAS counterparts



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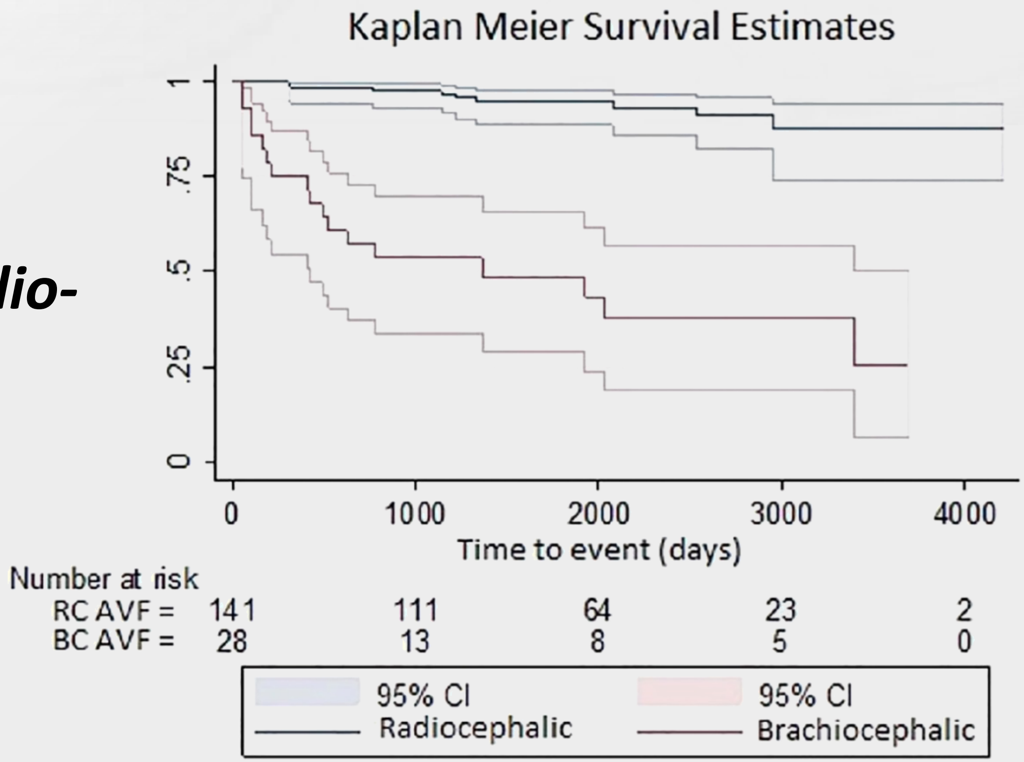
Time to event for CAS development comparing radio-cephalic and brachio-cephelic AVF

Brachio-cephalic AVF more likely to develop CAS compared with radio-cephalic AVF



JVA 2023 Vol 24(5) 1084-1090

SMALL DATA SET

- **Reducing the chance to find smaller magnitude association with CAS in base line characteristics**
- **Cases selected from a vascular interventional data base (dysfunctional AVFs) > overestimation of CAS prevalence**
- **Interobservator and interfistula variations in flow rate measurement (US velocity dilution technique)**

JVA 2023 Vol 24(5) 1084-1090

Brachiocephalic AVF with higher access flow rates are more likely to develop CAS and earlier than radiocephalic AVF, and in a dose dependent fashion.

AVF flow rate is a major factor in CAS development within brachiocephalic AVF and has potential utility in surveillance thresholds for prophylactic blood flow reduction procedures.

AVFs with CAS likely have higher patient morbidity and healthcare expenditure, with a greater number of interventional procedures per access-year

JVA 2023 Vol 24(3) 358-369

ASDIN

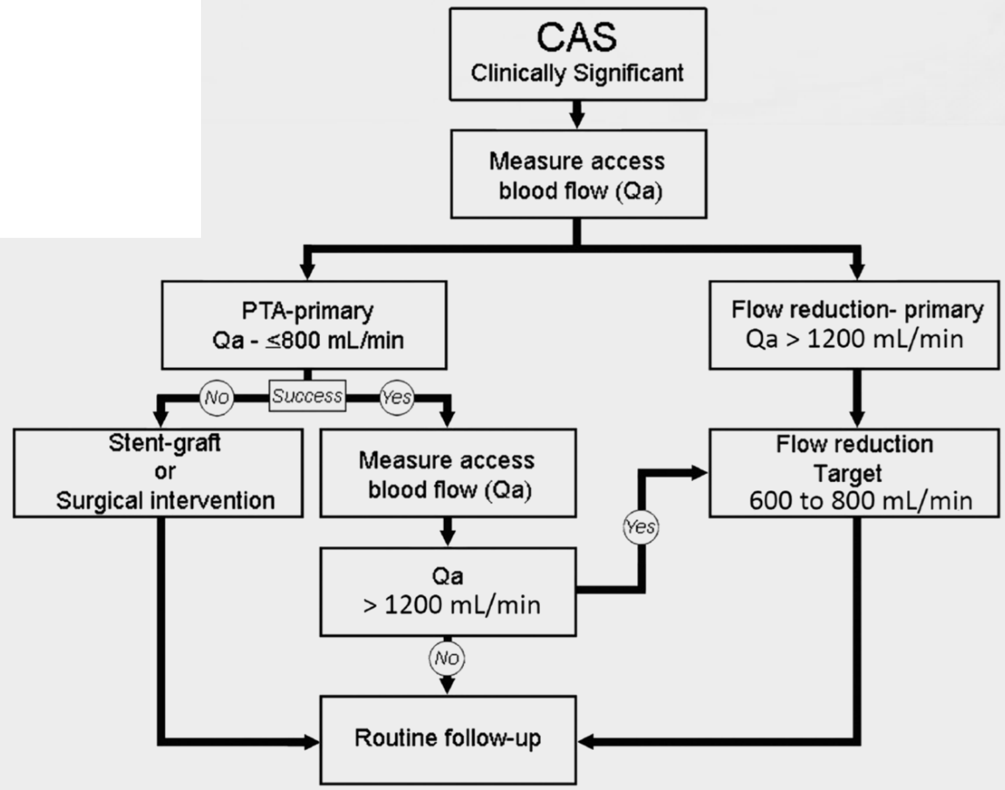
JVA The Journal of Vascular Access

The Journal of Vascular Access
2023, Vol. 24(3) 358–369

DOI: 10.1177/11297298211033519
journals.sagepub.com/home/jva
SAGE

ASDIN white paper: Management of cephalic arch stenosis endorsed by the American Society of Diagnostic and Interventional Nephrology*

Gerald A Beathard[1], William C Jennings[2], Haimanot Wasse[3], Surendra Shenoy[4], Abigail Falk[5], Aris Urbanes[6], John Ross[7], George Nassar[8], Dirk M Hentschel[9], Bharat Sachdeva[10], Micah R Chan[11], Loay Salman[12] and Arif Asif[13]



Kidney Intern. 2023 Vol 104(6) 189-190

Prospective, randomized, multicenter clinical study comparing a self-expanding covered stent to percutaneous transluminal angioplasty for treatment of upper extremity hemodialysis arteriovenous fistula stenosis

Check for updates

OPEN

Bart Dolmatch[1,2], Timoteo Cabrera[3], Pablo Pergola[3], Saravanan Balamuthusamy[4,5], Angelo Makris[6], Randy Cooper[7], Erin Moore[8,9], Jonah Licht[10,11], Ewan Macaulay[12], Geert Maleux[13], Thomas Pfammatter[14], Richard Settlage[15], Ecaterina Cristea[16] and Alexandra Lansky[16]; and the AVeNEW Trial Investigators[17]

AveNEW = multicentric prospective randomized study

24 centers – 280 patients

- **142 covered stent**
- **138 balloon angioplasty**

Table 3 | Baseline patient demographics, risk factors, and medical history

Patient demographics[a]	Covered stent	PTA	Total	P[b]
Patients treated	142	138	280	
US[c]	131	131	262	
Outside the US[d]	11	7	18	
Age, yr	63 ± 13.2	62 ± 11.6	63 ± 12.4	0.7
Gender				0.76
Male	62.7 (89)	60.9 (84)	61.8 (173)	
Female	37.3 (53)	39.1 (54)	38.2 (107)	
BMI, kg/m^2	30.8 ± 6.30	28.9 ± 5.79	29.8 ± 6.12	0.01
Ethnicity				0.38
Hispanic or Latino	33.8 (48)	39.1 (54)	36.4 (102)	
Non–Hispanic or Latino	65.5 (93)	60.9 (84)	63.2 (177)	
Not reported	0.7 (1)	0	0.4 (1)	
Race				0.08
White	70.4 (100)	66.7 (92)	68.6 (192)	
Black	25.4 (36)	26.1 (36)	25.7 (72)	
Asian	0	4.3 (6)	2.1 (6)	
Pacific Island	1.4 (2)	0	0.7 (2)	
Medical history				
Hypertension	97.9 (139)	96.4 (133)	97.1 (272)	0.45
Diabetes (type 2)	71.1 (101)	68.1 (94)	69.6 (195)	0.78
Dyslipidemia	66.9 (95)	61.6 (85)	64.3 (180)	0.35
Cigarette smoking	43.7 (62)	44.9 (62)	44.3 (124)	0.83
Current	5.6 (8)	10.9 (15)	8.2 (23)	
Former	38.0 (54)	34.1 (47)	36.1 (101)	
Coronary artery disease	32.4 (46)	37.7 (52)	35.0 (98)	0.35
Congestive heart failure	24.6 (35)	29.0 (40)	26.8 (75)	0.41
Peripheral arterial/vascular disease	16.9 (24)	21.0 (29)	18.9 (53)	0.38
Myocardial infarction	15.5 (22)	13.0 (18)	14.3 (40)	0.56
Cancer	12.0 (17)	10.9 (15)	11.4 (32)	0.77
Atrial fibrillation	10.6 (15)	11.6 (16)	11.1 (31)	0.78
Valvular heart disease	4.2 (6)	2.9 (4)	3.6 (10)	0.55
Deep vein thrombosis	3.5 (5)	2.9 (4)	3.2 (9)	0.77
Transient ischemic attack	1.4 (2)	5.1 (7)	3.2 (9)	0.08
Aortic disease	1.4 (2)	2.9 (4)	2.1 (6)	0.39

K. Intern. 2023 Vol 104(6) 189-190

Angiographic inclusion criteria
• Angiographic evidence of a stenosis ≥50% in the venous outflow of an arteriovenous access circuit with clinical or hemodynamic evidence of AVF dysfunction • The target lesion was ≤9 cm in length. (Note: Multiple stenoses could be treated within the target lesion) • Reference vessel diameter of the adjacent nonstenotic vein was 5–9 mm • Additional stenotic lesions (≥50%) in the access circuit that were >3 cm from the edge of the target lesion and were successfully treated with PTA (≤30% residual stenosis) prior to treating the target lesion

PRIMARY OUTCOME

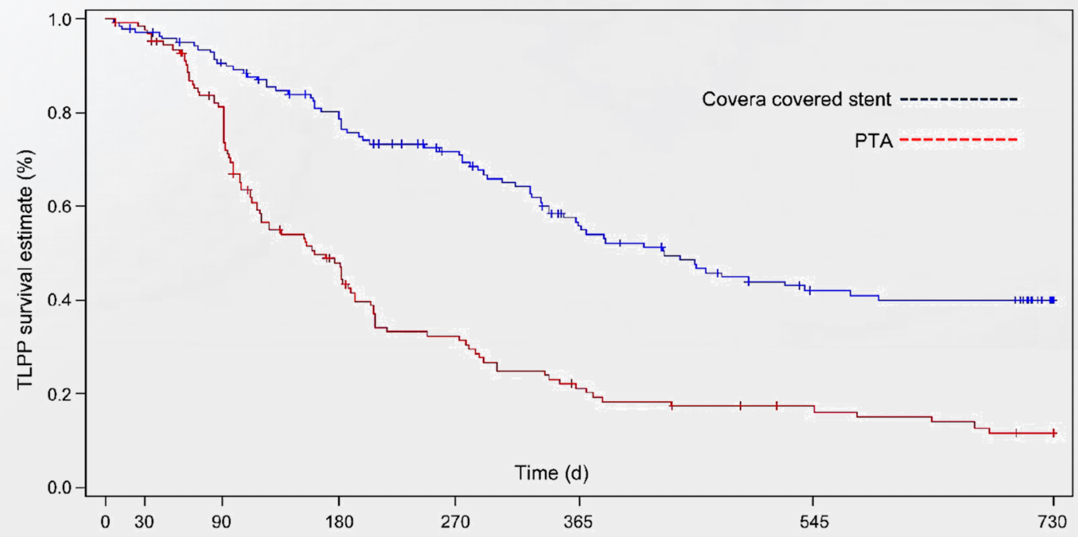
- **30-days safety, powered non inferiority**
- **6 and 12-month target lesion primary patency (TLPP)**
- **6-month access circuit primary patency (ACPP)**

SECONDARY OUTCOME

- **24-month TLPP**
- **24-month ACPP**

Kidney Intern. 2023 Vol 104(6) 189-190

PRIMARY OUTCOME



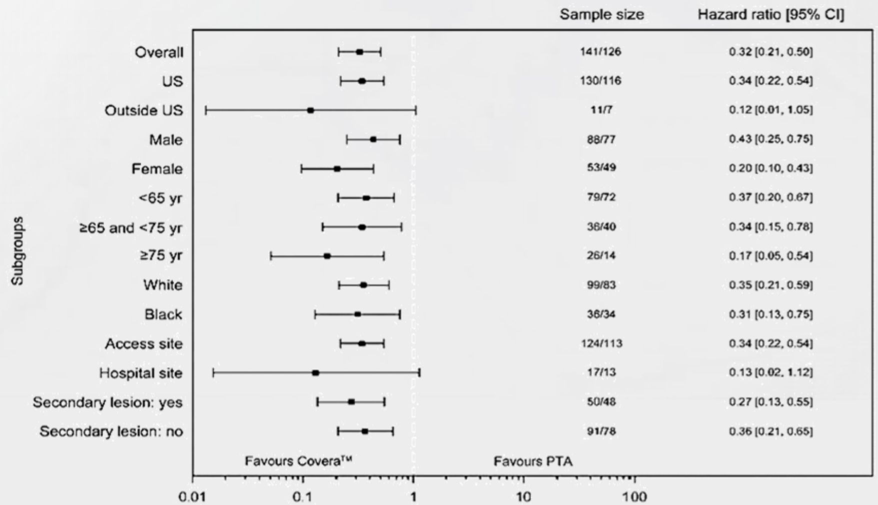
- **Safety was significantly non-inferior**
- **TLPP at 6- and 12-month superior for the covered stent group compared to PTA alone**

  - 6 months: 78.7% versus 55.8%

  - 12 months: 47.9% versus 21.2%.

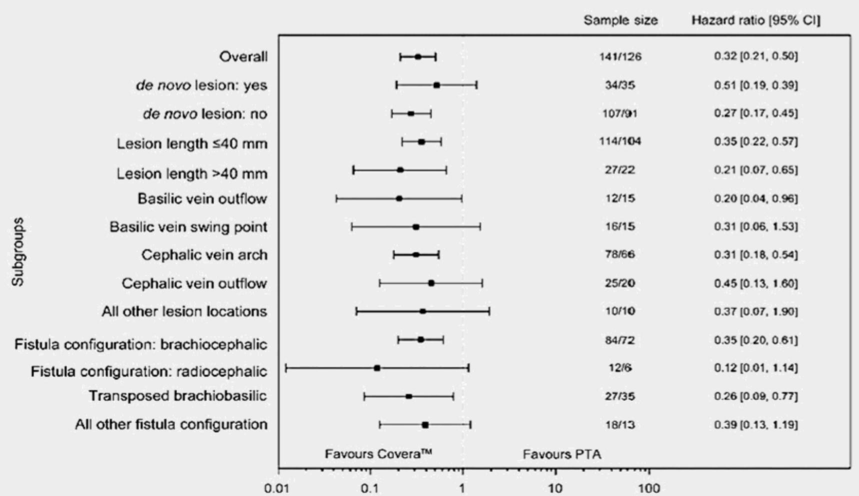
Kidney Intern. 2023 Vol 104(6) 189-190

Prespecified subgroup analyses to assess the impact of baseline demographics and geographic location on TLPP at 6 months.



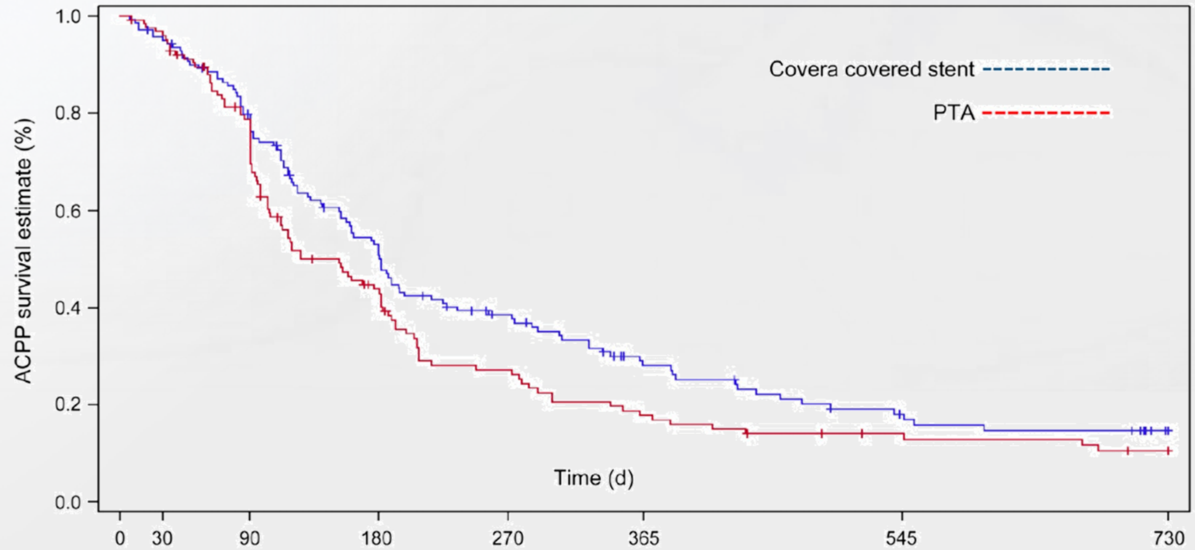
6-mo TLPP by demographic and baseline characteristics (m-ITT population)

All subgroup showed a benefit of covered stent compared to PTA



6-mo TLPP by lesion characteristics (m-ITT population)

Kidney Interv. 2023 Vol 104(6) 189-190



Although numerical differences in ACPP favored the covered-stent group over the PTA group, these differences were not statistically significant at 6, 12, or 24 months

NOT SURPRISING

Circuit patency is multifactorial

Kidney Intern. 2023 Vol 104(6) 189-190

At 24 months to compare with PTA

- **28.4% better TLPP**
- **fewer target lesion reinterventions (1.6 ± 1.6 versus 2.8 ± 2.0)**
- **a longer mean time between target-lesion reinterventions (380.4 ± 249.5 versus 217.6 ± 158.4 days).**

Multicenter, prospective, randomized study of a covered stent used to treat AVF stenosis demonstrated noninferior safety with better TLPP and fewer target-lesion reinterventions than PTA alone through 24 months

Kidney Intern. 2023 Vol 104(6) 189-190

LIMITATIONS

- **Investigators, staff, and patients were blinded through the point of pre-dilation, but not to the treatment allocation.**
- **Inherent treatment bias after randomization, as sizing of PTA balloons and covered stents**
- **Selected population (eligibility criteria) not be generalizable to patient treated in daily pratice**
- **Patient attrition due to all cause mortality : 19% of patients in the covered-stent group died, and 23.2% in the PTA group died through 24 months.**
- **29% of our patients were not followed to study completion,**

Cardiovasc Intervent Radiol 2023 Vol 46 983-990

Cardiovasc Intervent Radiol (2023) 46:983–990
https://doi.org/10.1007/s00270-023-03476-0

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CLINICAL INVESTIGATION VENOUS INTERVENTIONS

Comparison of Clinical Performance Between Two Types of Symmetric-Tip Hemodialysis Catheters: A Single-Centre, Randomized Trial

Pauline Braet[1] · Andries Van Holsbeeck[2,3] · Pieter-Jan Buyck[4] · Annouschka Laenen[5] · Kathleen Claes[1] · Katrien De Vusser[1] · Geert Maleux[4]

Monocentric prospective randomized study

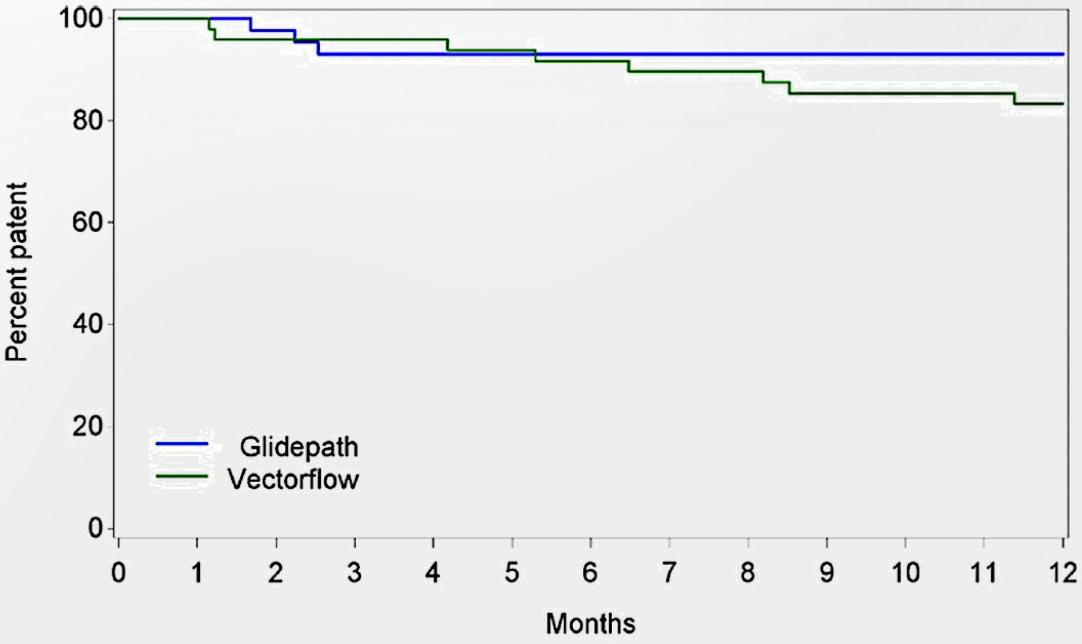
Comparaison of the clinical performance of 2 type of dialysis catheter with symetric-tip Glidepath and VectorFlow

Demographic characteristics compared using a Mann–Whitney U test for continuous outcomes, or a Chi-squared test for categorical outcomes.

Characteristic	Vectorflow (n = 50)	Glidepath (n = 48)	*P* Value
Age (y)			
Mean	66	69	0.87
Interquartile range	19–94	37–90	
Sex (M/F)			
F	21/50 (42%)	20/48 (42%)	0.97
M	29/50 (58%)	28/48 (58%)	
Body mass index (kg/m^2)			
Mean	25	25	0.64
Interquartile range	15–39	16–40	
Cardiac function (Ejection fraction of the LV (%))			
Mean	51 (n = 45)	54 (n = 45)	0.17
CCI			
Mean	6.5	7.0	0.48
Site of placement			
Left	5/50 (10%)	7/48 (15%)	0.49
Right	45/50 (90%)	41/48 (85%)	

Cardiovasc Intervent Radiol 2023 Vol 46 983-990

Primary outcome = catheter patency at 1 year



Catheter failure

- **Removal of KT < infection**
- **Low blood flow < thrombosis or fibrin sheath**

Cardiovasc Intervent Radiol 2023 Vol 46 983-990

Secondary outcome

Outcome	Vectorflow	Glidepath	*P* value
Qb (ml/min)			
3 months	299 (290–308)	303 (293–313)	0.58
1 year	309 (298–320)	313 (300–325)	0.64
All time points	302 (295–309)	304 (296–312)	0.74
Kt/V			
3 months	1.7 (1.5–1.8)	1.7 (1.5–1.8)	0.79
1 year	1.6 (1.5–1.8)	1.6 (1.5–1.8)	0.90
All time points	1.6 (1.5–1.7)	1.6 (1.5–1.7)	0.98
URR (%)			
3 months	74 (72–77)	75 (73–78)	0.59
1 year	76 (73–79)	73 (70–75)	0.26
All time points	75 (72–77)	74 (72–77)	0.86

- **Qb blood flow rate**
- **Kt/V fractional urea clearance**
- **URR urea reduction ratio**

Cardiovasc Intervent Radiol 2023 Vol 46 983-990

- Safe percutaneous catheter
- Insertion and clinically good performance of both types
- No better performance of one versus the other catheter

LIMITATIONS.

- Study population limited to 98 patients.
- Follow-up of the patients not completely uniform (missing results of seven patients).

Cardiovasc Intervent Radiol 2023 Vol 46 983-990

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https://doi.org/10.1007/s00270-023-03525-8

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COMMENTARY COMMENTARY

Comparison of Clinical Performance Between Two Types of Symmetric-Tip Haemodialysis Catheters: A Single-Centre, Randomized Trial

José Garcia-Medina[1] · Juan Jose Garcia-Alfonso[2]

It's missing one more categorical conclusion about which is the catheter of their choice and why.

Cardiovasc Intervent Radiol (2023) 46:1761–1762
https://doi.org/10.1007/s00270-023-03551-6

CIRSE

LETTER TO THE EDITOR VENOUS INTERVENTIONS

Re: Comparison of Clinical Performance Between Two Types of Symmetric-Tip Hemodialysis Catheters: A Single-Centre, Randomized Trial

Timothy W. I. Clark[1] · Gregory J. Nadolski[2]

The results may be difficult to generalize to a broader population of hemodialysis patients.