

Source	Initial data	Data collected at three months			Data collected at six months			Data collected at 12 months			Data collected at 24 months		
	Technical success	Primary patency	Secondary patency	Access circuit primary patency	Primary patency	Secondary patency	Access circuit primary patency	Primary patency	Secondary patency	Access circuit primary patency	Primary patency	Secondary patency	Access circuit primary patency
Haskal <i>et al.</i> 2010	Yes	Yes	No	No	Yes	No	Yes	No	No	No	No	No	No
	(anatomical success)	(patency of treatment area)			(patency of treatment area)								
Haskal <i>et al.</i> 2016	Yes	No	No	No	No	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
	(anatomical success)					(post-procedural secondary patency)		(treatment area primary patency)	(post-procedural secondary patency)	(treatment area primary patency)	(post-procedural secondary patency)		
Vesely <i>et al.</i> 2016	Yes	No	No	No	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes
	(anatomical success)				(target lesion primary patency)			(target lesion primary patency)			(target lesion primary patency)		
Kavan <i>et al.</i> 2016	No	No	No	No	Yes	No	Yes	No	No	No	No	No	No

Yang <i>et al.</i> 2018	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	No	No	No
		(post-intervention primary patency)			(post-intervention primary patency)			(post-intervention primary patency)					
Kavan <i>et al.</i> 2019	Yes	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
								(primary patency rates)			(primary patency rates)		
Ave-NEW (on-going)	Yes	No	No	No	Yes	No	Yes	Yes	No	Yes	On-going	No	On-going

Supplementary Table 1. Summary of outcome data specifically stated at three, six, 12, and 24 months, otherwise estimated by Kaplan-Meier curves. Interchangeable definitions were cited in brackets if different from terminology in the heading.

Source	Treatment	Access characteristics								Target lesion/location of stenosis	Age of access (years)	Number of prior interventions	
		Arm with graft/fistulae	Location of access	AV graft configuration	AV graft type	Arterial anastomosis		Venous anastomosis					
Haskal <i>et al.</i> 2010	Angioplasty	Left	Forearm: 24 (26.1%)	Loop	Tapered: 10 (12.9%)	Axillary	2 (2.2%)	Axillary	30 (32.3%)	NR	n=93	2.2 ± 1.9	NR
		71 (76.3%)	Upper arm: 67 (72.8%)	37 (39.7%)	Straight: 61 (79.2%)	Brachial	87 (93.5%)	Basilic	51 (54.8%)				
		Right	Across elbow (jump): 1 (1.1%)	Straight	Stepped: 5 (6.5%)	Radial	4 (4.3%)	Brachial	3 (3.2%)				
		22 (23.7%)	56 (50.3%)	Other: 1 (1.3%)	Ulnar	0	Cephalic	9 (9.7%)					
					Other	0	Other	0					
	Covered stents	Left	Forearm: 20 (20.6%)	Loop	Tapered: 14 (17.5%)	Axillary	2 (2.1%)	Axillary	22 (22.7%)	NR	n=97	2.7 ± 2.1	NR
		74 (76.3%)	Upper arm: 73 (75.3%)	42 (43.3%)	Straight: 53 (66.3%)	Brachial	92 (94.8%)	Basilic	56 (57.7%)				
		Right	Across elbow (jump): 2 (2.1%)	Straight	Stepped: 8 (10%)	Radial	1 (1.0%)	Brachial	14 (14.4%)				
		23 (23.7%)	55 (56.7%)	Other: 5 (6.2%)	Ulnar	0	Cephalic	3 (3.1%)					
					Other	2 (2.1%)	Other	2 (2.1%)					

Rajan <i>et al.</i> 2015	Angioplasty	Left 3 (60.0%) Right 2 (40.0%)	NR	N/A	N/A	Brachial 5 (100%)	Cephalic 5 (100%)	All cephalic arch stenoses Junction 1 (20.0%) Through arch 4 (80.0%)	NR	n=3 patients with previous BMS were treated w angioplasty alone 0.6 ± 0.55
	Covered stents	Left 2 (22.2%) Right 7 (77.8%)	NR	N/A	N/A	Brachial 9 (100%)	Cephalic 9 (100%)	All cephalic arch stenoses Junction 1 (11.1%) Through arch 8 (88.9%)	NR	0
Haskal <i>et al.</i> 2016	Angioplasty	Left 97 (73.5%) Right 35 (26.5%)	Forearm: 14 (10.6%) Across antecubital fossa 0 Upper arm: 118 (89.4%)	Loop 34 (25.8%) Straight 98 (74.2%)	NR	Axillary 5 (3.8%)	Axillary 57 (43.2%)	NR	n=132 1.7 ± 2.2	n=132 1.6 ± 2.5
		Brachial 124 (93.9%)	Basilic 57 (43.2%)							
		Radial 2 (1.5%)	Brachial 14 (10.6%)							
		Ulnar 1 (0.8%)	Cephalic 4 (3.0%)							
		Other 0	Other 0							

	Covered stents	Left 99 (71.7%)	Forearm: 13 (9.4%) Across antecubital fossa	Loop 38 (27.7%)	NR	Axillary 4 (2.9%)	Axillary 62 (44.9%)	NR	n=138 1.8 ± 2.1	n=138 1.8 ± 2.1
		Right 39 (28.3%)	Upper arm: 124 (89.9%)	Straight 99 (72.3%)		Brachial 129 (93.5%)	Basilic 42 (30.4%)			
						Radial 4 (2.9%)	Brachial 24 (17.4%)			
						Ulnar 0	Cephalic 7 (5.1%)			
						Other 1 (0.7%)	Other 3 (2.2%)			
Vesely <i>et al.</i> 2016	Angioplasty	Left 104 (70.3%)	Forearm 49 (33.1%)	Loop 82 (55.4%)	NR	NR	NR	Venous anastomosis of prosthetic graft	n=137 (EPP) 2.3 ± 2.7	n=138 1.8 ± 2.3
		Right 44 (29.7%)	Upper arm 99 (66.9%)	Straight 32 (21.6%) Data not available: 34 (23.0%)						
	Covered stents	Left 105 (72.4%)	Forearm 46 (31.7%)	Loop 83 (57.2%)	NR	NR	NR	Venous anastomosis of prosthetic graft	n=130 (EPP) 2.0 ± 2.0	n=131 1.9 ± 2.3
		Right 40 (27.6%)	Upper arm 99 (68.3%)	Straight 27 (18.6%) Data not available: 35 (24.2%)						

Kavan <i>et al.</i> 2016	Angioplasty	See Kavan <i>et al.</i> 2019										Overlapping study in 2019
	Covered stents	See Kavan <i>et al.</i> 2019										
Yang <i>et al.</i> 2018	Angioplasty	NR	Upper arm 36 (73.5%) Forearm 13 (26.5%)	Loop (all 6mm) 49 (50.0%)	NR	NR		Axillary	32 (65.3%)	NR	n=49 3.3 ± 2.6	NR
								Basilic	8 (16.3%)			
								Brachial	4 (8.2%)			
								Cephalic	3 (6.1%)			
								Antecubital	1 (2.0%)			
								Subclavian	1 (2.0%)			
	Covered stents	NR	Upper arm 33 (67.3%) Forearm 16 (32.7%)	Loop (all 6 mm) 49 (50.0%)	NR	NR		Axillary	30 (61.2%)	NR	n=49 4.6 ± 8.5	NR
								Basilic	8 (16.3%)			
								Brachial	3 (6.1%)			
								Cephalic	6 (12.2%)			
								Antecubital	0			
								Subclavian	2 (4.1%)			
Angioplasty			Loop		Brachial	16	Superficial	13	Venous arm			

Kavan <i>et al.</i> 2019		NR	NR	12 (60.0%) Straight 8 (40.0%)	NR		(80.0%)		(65.0%)	11 (55.0%) Anastomosis 9 (45.0%)	3.1 (IQR 3.8)	NR
	Covered stents	NR	NR	Loop 15 (75.0%) Straight 5 (25.0%)	NR	Radial	4 (20.0%)	Deep	7 (35.0%)	16 (80.0%) Superficial 4 (20.0%)	16 (80.0%) Venous arm 4 (20.0%) Anastomosis 16 (80.0%)	4 (IQR 3.0)
AveNEW (ongoing)	Angioplasty	NR	NR	N/A	N/A	NR	NR	Cephalic	95 (68.8%)	Cephalic arch 70 (50.7%) Cephalic vein outflow 24 (17.4%)	NR	NR
	Covered stents	NR	NR	N/A	N/A	NR	NR	Basilic	42 (30.4%)	Basilic vein swing point and outflow 33 (23.9%)	NR	NR
								Cephalic	105 (73.9%)	Cephalic arch 78 (54.9%) Cephalic vein outflow 25 (17.6%)	NR	NR
								Basilic	35 (24.6%)	Basilic vein swing point and outflow 29 (20.4%)		

Supplementary table 2. Summary of arteriovenous access characteristics in included studies.

Abbreviations: AV: arteriovenous; NR: not recorded; EPP = effectiveness per protocol.

Source	Treatment	COMPLICATIONS																			Author comments
		CVA	CCF	Kinking	Migration	Emb-olism	Haema-toma	Haem-orrhage	Infec-tion	Pain	Perfora-tion	Perman-ent deform-ation	Pseudo-aneurysm	Oe-dema	Steal synd-rome	Stenosis requiring re-intervention	Thrombos-is	Vessel rupture	Death	Other	
Haskal <i>et al.</i> 2010	Angio	3 3%	2 2%	N/A	N/A	0	0	2 2%	2 2%	NR	NR	N/A	2 2%	2 2%	1 1%	69 77%	19 21%	1 1%	5 6%	0	
	Stents	2 2%	4 4%	0	4 4%	0	2 2%	6 6%	6 6%	NR	NR	1 1%	5 5%	3 3%	2 2%	38 40%	31 33%	3 3%	5 5%	0	
Rajan <i>et al.</i> 2015	Angio	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	No complications or adverse events were observed for angioplasty or stent-graft placement
	Stents	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Haskal <i>et al.</i> 2016	Angio	6 4.50%	6 4.50%	0 N/A	N/A 1 0.8%*	0	1 0.80%	10 7.60%	42 31.80%	6 4.50%	0	0 N/A	16 12.10%	3 2.30%	3 2.30%	109 82.60%	48 36.40%	2 1.50%	NR	83 62.90%	There was no significant difference between the percentage of patients with at least 1 adverse events: 94.2% (130 of 138) for the SG group and 97.0% (128 of 132) for the PTA group (p = 0.378). No deaths were related to device.
	Stents	2 1.40%	9 6.50%	0	1 0.70%	1 0.7%	5 3.60%	10 7.2%	40 29%	14 10.1%	1 0.7%	0	9 6.5%	3 2.20%	6 4.30%	87 63%	60 43.50%	2 1.4%	NR	82 59.40%	
Vesely <i>et al.</i> 2016	Angio	NR (26) 2 minor, 2 major 22 deaths					1												22	1 Infilt- ration leading to graft abando nment	There were no differences in the proportion of patients who experienced any device, procedure,

	Stents	NR (27) 4 minor, 23 deaths																		23	and treatment site-related adverse event, either major or minor, between the two treatment groups (P ¼ .98). There were no major procedure-related or stent graft-related adverse events in patients treated with a Viabahn stent graft during the 24-month study period. No deaths were related to device
Kavan <i>et al.</i> 2016	Angio	NR																			Not stated and study was in Czech
	Stents	NR																			
Yang <i>et al.</i> 2018	Angio	NR																			Neither the study group nor the control group had any major intraoperative complications requiring surgical or medical

	Stents	NR	treatment, and no procedure-related adverse events were observed during the outpatient clinic follow-up (6 months)
Kavan <i>et al.</i> 2019	Angio	NR	Not stated
	Stents	NR	
Ave- NEW (on- going)	Angio	Ongoing	Trial is ongoing
	Stents	Ongoing	

Supplementary table 3. Summary of complications in included studies. Blank cells and NR indicate no records. Abbreviations: CVA: cerebrovascular accident; CCF: congestive cardiac failure.

Source	Treatment	Time	Method used to measure patency at follow-up	Comments
Haskal <i>et al.</i> 2010 (FLAIR pivotal trial)	Angioplasty	Baseline	Angiography	Mandatory clinical review and angiography w core lab quantitative review at 2 and 6 m
		2m	Angiography	
		6m	Angiography	
	Covered stents	Baseline	Angiography	
2m		Angiography		
6m		Angiography		
Rajan <i>et al.</i> 2015	Angioplasty	Baseline	Angiography	Clinical evaluation for evidence of access dysfunction according to Kidney Disease Outcomes Quality Initiative criteria or angiographic follow-up as per institutional protocol at 3- month intervals
		3m	Ultrasound and/or angiography	
		6m	Ultrasound and/or angiography	
	1y	Ultrasound and/or angiography		
Covered stents	Covered stents	Baseline	Angiography	Ultrasound initially unless meet certain criteria then proceed with angiography
		3m	Ultrasound and/or angiography	
		6m	Ultrasound and/or angiography	
		1y	Ultrasound and/or angiography	

Haskal <i>et al.</i> 2016 (RENOVA trial)	Angioplasty	Baseline 1m (30 days) 6m 1y 2y	Angiography * * * *	Patency numbers in both groups were higher than in the Flair pivotal trial because there was no mandatory angiographic follow-up*, and therefore, there was no loss of patency due to angiographic findings alone.
	Covered stents	Baseline 1m (30 days) 6m 1y 2y	Angiography * * * *	
Vesely <i>et al.</i> 2016 (REVISE trial)	Angioplasty	Baseline 1m (30 days) 3m 6m 1y 18m 2y	Angiography ** ** ** ** ** **	Management of each patient's haemodialysis graft was determined by the patient's nephrologist and local protocols at the haemodialysis treatment centre**. Follow up in 1, 3, 6, 12, 18, and 24 months
	Covered stents	Baseline 1m (30 days) 3m 6m 1y 18m 2y	Angiography ** ** ** ** ** **	
Kavan <i>et al.</i> 2016	Angioplasty	Baseline 1m (30 days) 3m 6m 1y	Angiography Angiography Angiography Angiography Angiography	Unclear as study was in Czech with limited English translation Inferred that angiograms were done at 3/6/12m from subsequent English paper published

	Covered stents	Baseline 1m (30 days) 3m 6m 1y	Angiography Angiography Angiography Angiography	Data at 12m overlapped with later study (Kavan 2019)
Yang <i>et al.</i> 2018	Angioplasty	Baseline 1m (30 days) 3m 6m 1y 2y	Angiography Angiography Angiography Angiography ***	Clinical follow-up day 7 then monthly Minimum follow-up was 1.5 years Angiogram at 3m and 6m***. Kaplan-Meier curves were constructed from these data
	Covered stents	Baseline 1m (30 days) 3m 6m 1y 2y	Angiography Angiography Angiography Angiography ***	
Kavan <i>et al.</i> 2019	Angioplasty	Baseline 1m (30 days) 3m 6m 1y 2y	Angiography Angiography Angiography Angiography ‡	Clinical follow-up interval not stated Mean duration 22.4 months Angiography may be earlier if suspected stenosis After 1y, angiography if clinical indication‡. Kaplan-Meier curves were constructed from these data.
	Covered stents	Baseline 1m (30 days) 3m 6m 1y 2y	Angiography Angiography Angiography Angiography ‡	

AveNEW (ongoing)	Angioplasty	Baseline 1m (30 days) 3m (90 days) 6m 1y 18m 2y 3y	Angiography ‡‡ ‡‡ ‡‡ ‡‡ ‡‡ ‡‡ ‡‡ ‡‡	Clinical and telephone follow-up Protocol did not state mandatory angiogram follow-up ^{‡‡} . 3-year follow-up (ongoing)
	Covered stents (brand)	Baseline 1m (30 days) 3m (90 days) 6m 1y 18m 2y 3y	Angiography ‡‡ ‡‡ ‡‡ ‡‡ ‡‡ ‡‡ ‡‡ ‡‡	

Supplementary table 4. Summary of method used to measure patency at various time points in included studies.