On-line Table 1: Search syntax

PubMed Search Accessed on September 1, 2018 (89 Articles)	EMBASE Search Accessed on September 1, 2018 (43 Articles)	MEDLINE Search Accessed on September 1, 2018 (83 Articles)
(((flow diversion OR flow diverter)) AND Acom aneurysms)	'flow diverter' AND 'anterior communicating artery aneurysm'	((flow diversion or flow diverter) and acom).af.
(((flow diversion OR flow diverter)) AND anterior communicating artery aneurysms)	'flow diversion' AND 'anterior communicating artery aneurysm'	((flow diversion or flow diverter) and anterior communicating artery aneurysms).af.
((PIPELINE OR SILK OR SURPASS OR FRED)) AND (anterior communicating artery aneurysms)		

On-line Table 2: Summary of studies included in meta-analysis

Study Name	Design	No. of Aneurysms Treated with FD	Type of FD Stent	Successful Stent Deployment	Overall Complete/ Near-Complete Occlusion	Overall Rate of Treatment-Related Complications	Description of Complication	Quality of Studies (NOS)
Pistocchi et al 2012[22]	R	16	Silk	16/16	12/14	1/16	Transient hemiparesis due to slow flow of covered A2	
Toma et al 2013[25]	R	7	PED	7/7	NA	2/7	2 In-stent thromboses with permanent neurologic deficits	
Saleme et al 2014[23]	R	9	PED	9/9	9/9	NA	NA	
Gawlitza et al 2016[19]	R	5	4 PEDs, 1 FRED	5/5	5/5	2/5	2 Ischemic complications related to the covered artery of Heubner	
Clarencon et al 2017[26]	R	3	1 PED + 2 Silks	3/3	3/3	0/3	NA	
Dabus et al 2017[27]	R	13	PED	13/13	11/13	2/13	1 Small caudate infarct + 1 severe ICH	
Colby et al 2017[2]	R	41	PED	48/50 (No. of stents deployed)	29/34	4/41	1 Major stroke due to in-stent occlusion 48 hr after treatment +2 ICHs + 1 transient in-stent thrombosis during treatment, resolved after abciximab injection	
Möhlenbruch et al 2017[28]	PMC	11	FRED	11/11	6/9	0/11	NA	
Wakhloo et al 2015[29]	PMC	12	Surpass	NA	8/9	0/12	NA	
Lin et al (technical success rate) 2018[30]	R	10	PED	10/10	NA	NA	NA	
Lin et al (aneurysms retreated) 2017[14]	R	6	PED	5/6	5/6	0/6	NA	
Sultan-Qurraie et al 2017[31]	R	3	PED	3/3	3/3	0/3	NA	
Pierot et al 2018[20]	PMC	9	FRED	9/9	NA	3/9	1 Transient ischemic lesion + 1 transient in-stent occlusion +1 perforation aneurysm	
Lin et al 2018[32]	R	3	PED	3/3	NA	NA	NA	

Note:—R indicates retrospective study; P, prospective study; PMC, prospective multicentric study; FD, flow diversion; NA, not available; ICH, intracranial hemorrhage.

On-line Table 3: Quality measure of included studies by the Newcastle-Ottawa quality-assessment scale—retrospective design (score 0–8)[a]

	Selection				Comparability		Exposure			
Study Name	1	2	3	4	a	b	1	2	3	Total
Pistocchi et al 2012[22]	*	*				*	*			4
Toma et al 2013[25]	*	*					*			3
Saleme et al 2014[23]	*	*				*	*			4
Gawlitza et al 2016[19]	*	*				*	*			4
Clarencon et al 2017[26]	*	*				*	*			4
Dabus et al 2017[27]	*	*				*	*			4
Colby et al 2017[2]	*	*				*	*			4
Lin et al (technical success rate) 2018[30]	*	*					*			3
Lin et al 2018[32]	*	*					*			3
Sultan-Qurraie et al 2017[31]	*	*				*	*			4

[a] Newcastle-Ottawa quality-assessment scale for retrospective studies. Studies with ≥5 asterisks were considered high-quality.

Selection

1) Is the case definition adequate?
   a) Yes, with independent validation*
   b) Yes, eg, record linkage or based on self-reports
   c) No description
2) Representativeness of the cases
   a) Consecutive or obviously representative series of cases*
   b) Potential for selection biases or not stated
3) Selection of controls
   a) Community controls*
   b) Hospital controls
   c) No description
4) Definition of controls
   a) No history of disease (end point)*
   b) No description of source

Comparability

1) Comparability of cases and controls on the basis of the design or analysis
   a) Study controls for ____ (select the most important factor)*
   b) Study controls for any additional factor.* (these criteria could be modified to indicate specific control for a second important factor)

Note =

Comparability (point a) was not tested because the design of the reported studies.

Comparability (point b) was tested comparing subgroups of analysis: One point was attributed if the study reported the analysis of the subgroups (aneurysm size, type of stents, and so forth) described in On-line Table 6.

Exposure

1) Ascertainment of exposure
   a) Secure record (eg, surgical records)*
   b) Structured interview where blind to case/control status*
   c) Interview not blinded to case/control status
   d) Written self-report or medical record only
   e) No description
2) Same method of ascertainment for cases and controls
   a) Yes*
   b) No
3) Nonresponse rate
   a) Same rate for both groups*
   b) Nonrespondents described
   c) Rate different and no designation.

On-line Table 4: Quality measure of included studies by the Newcastle-Ottawa quality-assessment scale—prospective design (score 0–9)[a]

	Selection				Comparability		Outcome			
Study Name	1	2	3	4	a	b	1	2	3	Total
Möhlenbruch et al 2017[28]	*		*	*		*	*	*		6
Wakhloo et al 2015[29]	*		*	*		*	*	*		6
Lin et al 2018[32]	*		*	*			*	*		5

[a] Newcastle-Ottawa quality-assessment scale for prospective studies. Studies with ≥5 asterisks were considered high-quality.

Selection

1) Representativeness of the exposed cohort
   a) Truly representative of the average (patients treated with braided stents) in the community*
   b) Somewhat representative of the average (patients treated with braided stents) in the community*
   c) Selected group of users, eg, nurses, volunteers
   d) No description of the derivation of the cohort
2) Selection of the nonexposed cohort
   a) Drawn from the same community as the exposed cohort*
   b) Drawn from a different source
   c) No description of the derivation of the nonexposed cohort
3) Ascertainment of exposure
   a) Secure record (eg, surgical records)*
   b) Structured interview*
   c) Written self-report
   d) No description
4) Demonstration that outcome of interest was not present at start of study
   a) Yes*
   b) No

Comparability

1) Comparability of cohorts on the basis of the design or analysis
   a) Study controls for _____ (select the most important factor)*
   b) Study controls for any additional factor* (these criteria could be modified to indicate specific control for a second important factor)

Note =

Comparability (point a) was not tested because of the design of the reported studies

Comparability (point b) was tested comparing subgroups of analysis: One point was attributed if the study reported the analysis of the subgroups (aneurysm size, type of stents, and so forth) described in the On-line Table 6

Outcome

1) Assessment of outcome
   a) Independent blind assessment*
   b) Record linkage*
   c) Self-report
   d) No description
2) Was follow-up long enough for outcomes to occur

(Adequate follow-up was considered a follow-up longer than the median follow-up time of the reported studies: mean radiologic follow-up, 11 mo; mean clinical follow-up, 11 months)

   a) Yes (select an adequate follow-up period for outcome of interest)*
   b) No
3) Adequacy of follow-up of cohorts
   a) Complete follow up: all subjects accounted for*
   b) Subjects lost to follow-up unlikely to introduce bias: small number lost (<20% of the original population) to follow-up or description provided of those lost*
   c) Follow-up rate (<80% of the original population) and no description of those lost
   d) No statement

On-line Table 5: Patient population and characteristics of AcomA aneurysms treated with flow-diverter stents

Variables	Raw No. (%)	No. of Articles	95% CI
Population characteristics			
No. of patients/aneurysms	148	14	
Mean/median age (yr)	57/57.5 (24–80)	9	
Proportion male	28/61 = 46%	4	34–58
Aneurysm characteristics			
Proportion of previously ruptured aneurysms	55/91 = 60.4%	8	50–70
Proportion of aneurysms retreated with FD	54/107 = 50.4%	9	41–59
Mean aneurysm size	6.2 mm (median, 5.5; IQR, 5–7; range, 3–18)	10	
Treatment characteristics			
Type of FD stent			
PED	97/148 = 65.6%		57–72
Silk	18/148 = 12.1%		7–18
FRED	21/148 = 14.2%	14	9–21
Surpass	12/148 = 8.1%		4.4–13
No. of patients treated with multiple FDs	10/148 = 6.7%	14	3.5–12
No. of aneurysms treated with additional coiling	10/98 = 10.2%	9	5.4–17
Radiologic follow-up (DSA) (mo)	Mean, 11 (range, 4–18) Median, 12; IQR, 9.7–12	11	
Clinical follow-up (mo)	Mean, 11 (range, 6–19) Median, 12; IQR, 6–12	6	

On-line Table 6: Factors related to aneurysm occlusion and treatment-related complications after flow-diversion treatment of unruptured AcomA aneurysms

Variables	Complete/ Near-Complete Occlusion (95%CI) (I^2)	No. of Articles	*P* Value	Treatment-Related Complications (95%CI) (I^2)	No. of Articles	*P* Value
Aneurysm-related factors						
Small-medium aneurysms	32/35 = 90% (80–95) (I^2 = 0%)	6		2/35 = 7% (2–16) (I^2 = 0%)	6	
Vs			.07			.18
Large-giant aneurysms	11/14 = 70% (50–85) (I^2 = 42%)	6		3/14 = 20% (5–30) (I^2 = 0%)	6	
Patient-related factors						
Younger than 60 yr	14/16 = 89% (75–96) (I^2 = 93%)	4		1/16 = 7.5% (2–28) (I^2 = 0%)	4	
Vs			.7			.9
Older than 60 yr	14/17 = 85% (70–92) (I^2 = 0%)	4		1/17 = 7% (3–17) (I^2 = 10%)	4	
Treatment-related factors						
Type of FD stent						
PED	62/70 = 88.5% (78–94)	7		9/75 = 12% (6–21)	8	
FRED	8/10 = 80% (50–95)	2	>.05	3/21 = 14% (4–30)	3	>.05
Silk	13/15 = 86.6% (60–97)	2		1/17 = 6% (2–25)	2	
Surpass	8/9 = 88% (54–98)	1		0/12 = 0%	1	
First treatment	29/32 = 89% (79–98) (I^2 = 0%)	6		4/32 = 9% (4–18) (I^2 = 70%)	6	
Vs			.8			.7
Retreatment	31/33 = 88% (78–98) (I^2 = 0%)	8		2/33 = 7% (2–21) (I^2 = 0%)	8	
Flow-diverter alone	44/48 = 91% (84–98) (I^2 = 0%)	7		3/39 = 8% (3–23) (I^2 = 0)	6	
Vs			.7			.9
Flow-diverter plus coiling	15/16 = 88.5% (75–97) (I^2 = 0%)	4		1/16 = 7% (2–25) (I^2 = 46%)	4	

On-line Table 7: Outcomes after flow diversion of AcomA aneurysms related to type of dual AT before treatment

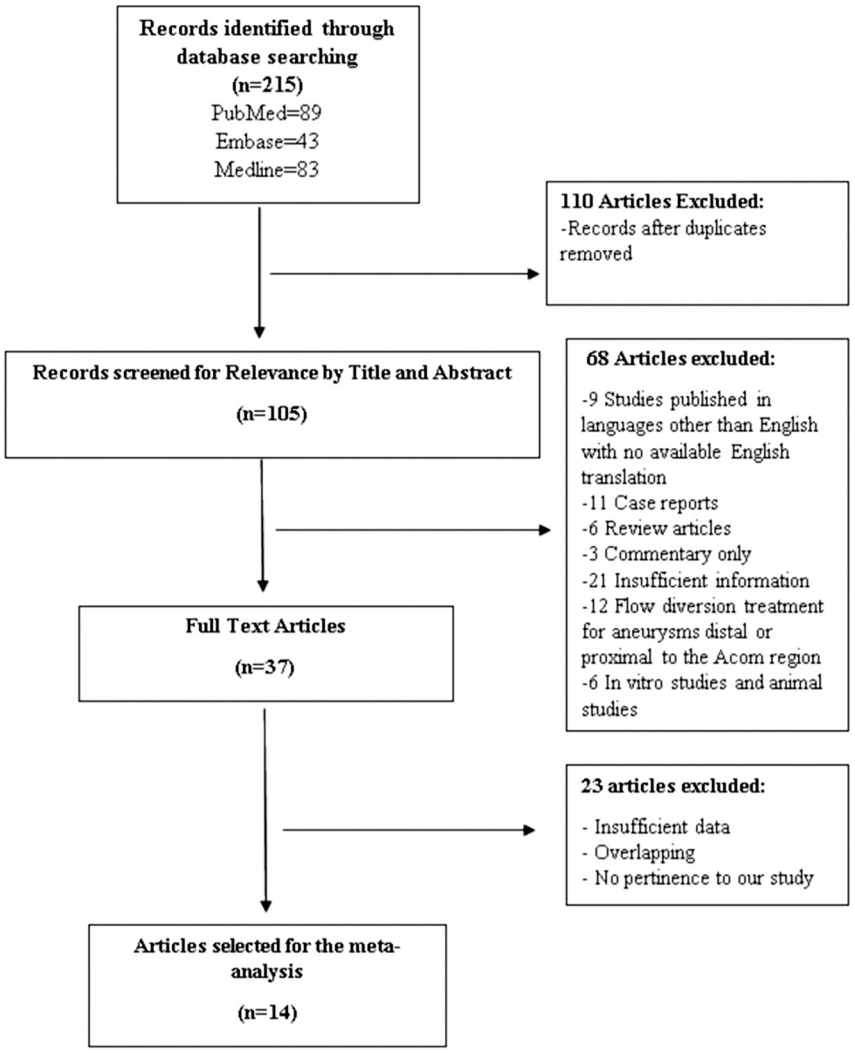
Outcomes	ASA, 81–160 mg, + CP, 75 mg, 3–7 Days before Treatment	ASA, 250–325 mg, + CP, 75 mg, 3–7 Days before Treatment	*P* Value
Periprocedural treatment-related complications (95% CI) (I^2)	1/20 = 5% (4–15) (I^2 = 0%) (3 articles)	3/40 = 6% (2–14) (I^2 = 0%) (4 articles)	.8

On-line Table 8: Outcomes after flow diversion of AcomA aneurysms related to the type of dual AT after treatment

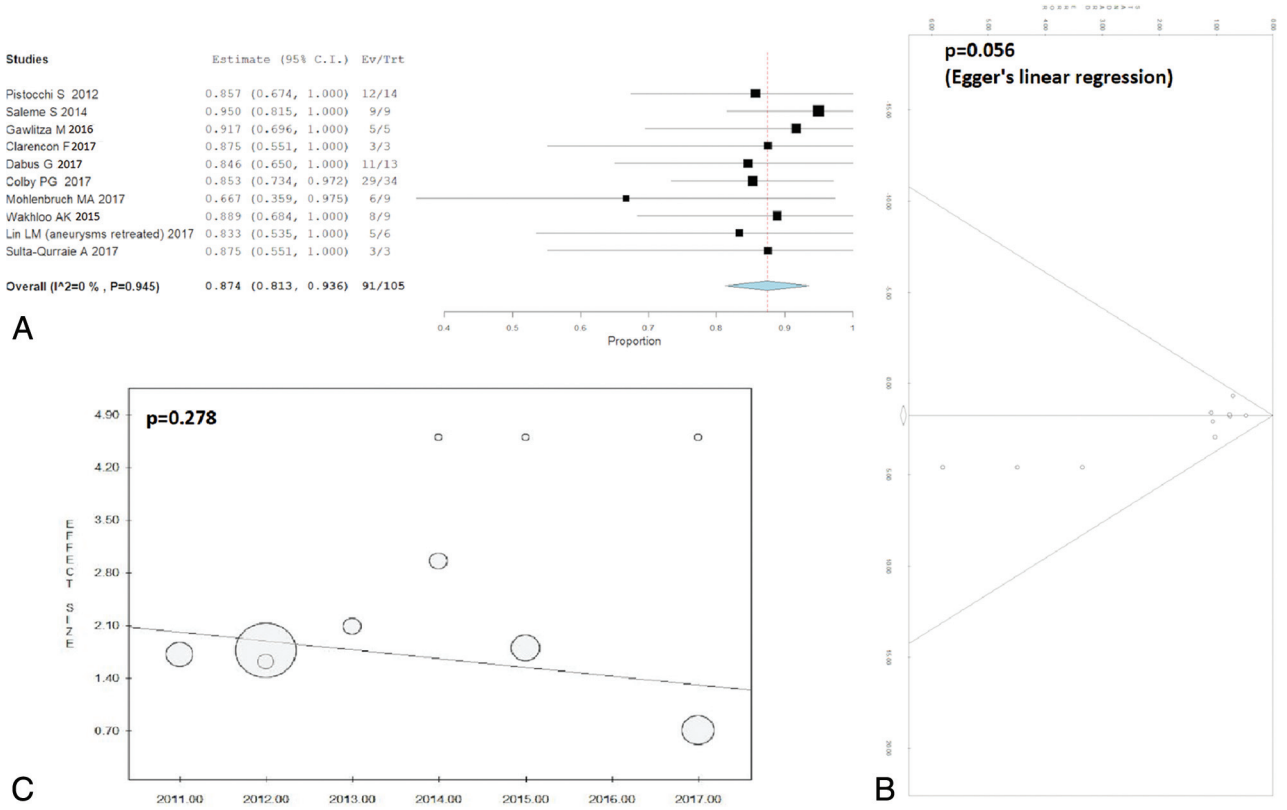
Outcomes	ASA, 81–100 mg, + CP, 75 mg, for 3–6 mo	ASA, 160–300 mg, + CP, 75 mg, for 3–6 mo	*P* Value
Delayed treatment-related complications (95% CI) (I^2)	0/23 = 0% (3 articles)	1/28 = 3.5% (3–11) (I^2 = 0%) (3 articles)	.36
Complete/near-complete occlusion (95% CI) (I^2)	28/29 = 94.5% (86–98) (I^2 = 0%) (3 articles)	17/19 = 88% (76–94) (I^2 = 0%) (3 articles)	.41

On-line Table 9: Outcomes after flow diversion of AcomA aneurysms related to the duration of dual AT after treatment

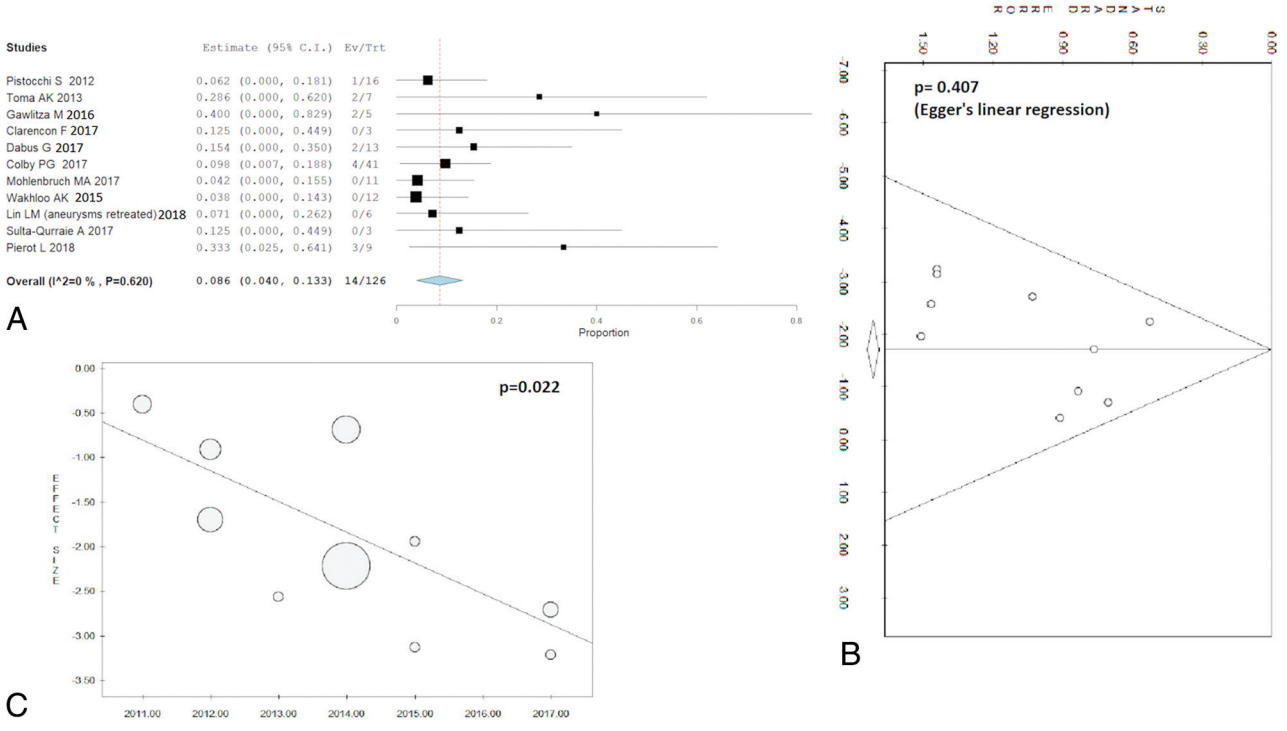
Outcomes	Dual AT (ASA + CP) until 3 mo	Dual AT (ASA + CP) until 6 mo	*P* Value
Treatment-related complications (95% CI) (I^2)	2/30 = 5% (3–12) (I^2 = 0%) (3 articles)	5/54 = 6.5% (4–13) (I^2 = 0%) (3 articles)	.77
Complete/near-complete occlusion (95% CI) (I^2)	25/27 = 93% (83–98) (I^2 = 0%) (3 articles)	20/22 = 91% (82–98) (I^2 = 0%) (3 articles)	.8



ON-LINE FIG 1. PRISMA diagram detailing the specifics of the systematic literature review.



ON-LINE FIG 2. Forest plot demonstrating the overall rate of AcomA aneurysm occlusion after flow diversion (*A*). Meta-regression shows a nonsignificant variation of the effect size (*B*). The funnel plot followed by the Egger linear regression test excludes publication bias (*C*).



ON-LINE-FIG 3. Forest plot demonstrating the overall rate of treatment-related complications after flow diversion of AcomA intracranial aneurysms (*A*). Meta-regression shows a significant variation of the effect size (*B*). The funnel plot followed by the Egger linear regression test excludes publication bias (*C*).