SUPPLEMENTARY MATERIALS

Content

1. Search strategies.

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1. Search strategies

(1) For Pubmed, the search used was:

#1 ((Aneurysms, Intracranial[Title/Abstract]) OR (Intracranial Aneurysms[Title/Abstract])) OR (Aneurysm, Intracranial[Title/Abstract])) OR (Aneurysm, Anterior Communicating Artery[Title/Abstract])) OR (Anterior Communicating Artery Aneurysm[Title/Abstract])) OR (Aneurysm, Basilar Artery[Title/Abstract])) OR (Aneurysms, Basilar Artery[Title/Abstract])) OR (Artery Aneurysm, Basilar[Title/Abstract])) OR (Artery Aneurysms, Basilar[Title/Abstract])) OR (Basilar Artery Aneurysms[Title/Abstract])) OR (Basilar Artery Aneurysm[Title/Abstract])) OR (Aneurysm, Middle Cerebral Artery[Title/Abstract])) OR (Middle Cerebral Artery Aneurysm[Title/Abstract])) OR (Aneurysm, Posterior Cerebral Artery[Title/Abstract])) OR (Posterior Cerebral Artery Aneurysm[Title/Abstract])) OR (Berry Aneurysm[Title/Abstract])) OR (Aneurysm, Berry[Title/Abstract])) OR (Aneurysms, Berry[Title/Abstract])) OR (Aneurysm, Brain[Title/Abstract])) OR (Aneurysms, Brain[Title/Abstract])) OR (Brain Aneurysms[Title/Abstract])) OR (Cerebral Aneurysm[Title/Abstract])) OR (Aneurysms, Cerebral[Title/Abstract])) OR (Aneurysm, Cerebral[Title/Abstract])) OR (Giant Intracranial Aneurysm[Title/Abstract])) OR (Aneurysm, Giant Intracranial[Title/Abstract])) OR (Aneurysms, Giant Intracranial[Title/Abstract])) OR (Giant Intracranial Aneurysms[Title/Abstract])) OR (Intracranial Aneurysm, Giant[Title/Abstract])) OR (Intracranial Aneurysms, Giant[Title/Abstract])) OR (Intracranial Aneurysms, Giant[Title/Abstract])) OR (Mycotic Aneurysm, Intracranial[Title/Abstract])) OR (Aneurysm, Intracranial Mycotic[Title/Abstract])) OR (Aneurysms, Intracranial Mycotic[Title/Abstract])) OR (Intracranial Mycotic Aneurysm[Title/Abstract])) OR (Mycotic Aneurysms, Intracranial[Title/Abstract])) OR (Aneurysm, Anterior Cerebral Artery[Title/Abstract])) OR (Anterior Cerebral Artery Aneurysm[Title/Abstract])) OR (Aneurysm, Posterior Communicating Artery[Title/Abstract])) OR (Posterior Communicating Artery Aneurysm[Title/Abstract])) OR ("Intracranial Aneurysm"[Mesh])

#2 ((((((((((flower diverter[Title/Abstract]) OR (flow diversion[Title/Abstract])) OR (flow diverter embolization[Title/Abstract])) OR (pipeline embolization[Title/Abstract])) OR (pipeline flex[Title/Abstract])) OR (pipeline device[Title/Abstract])) OR (flow diverting stent[Title/Abstract])) OR (Surpass Streamline[Title/Abstract])) OR (Tubridge[Title/Abstract])) OR (Surpass Streamline[Title/Abstract])) OR (p64 (device)[Title/Abstract])

#3 #1 AND #2

(2) For Embase, the search used was:

#1 'intracranial aneurysm'/exp

#2 'internal carotid artery aneurysm'/exp

#3 #1 OR #2

#4 ‘flow diverter’/exp OR ‘ pipeline embolization device’/exp

#5 #3 AND #4

(3) For Cochrane, the search used was:

#1 MeSH descriptor: [Intracranial Aneurysm] explode all trees

#2 (aneurysms, intracranial):ti,ab,kw OR (anterior communicating artery aneurysm):ti,ab,kw OR (aneurysm, anterior communicating artery):ti,ab,kw OR (aneurysm, basilar artery):ti,ab,kw OR (basilar artery aneurysm):ti,ab,kw OR (middle cerebral artery aneurysm):ti,ab,kw OR (aneurysm, middle cerebral artery):ti,ab,kw OR (posterior cerebral artery aneurysm):ti,ab,kw OR (aneurysm, posterior cerebral artery):ti,ab,kw OR (posterior communicating artery aneurysm):ti,ab,kw OR (aneurysm, posterior communicating artery):ti,ab,kw OR (brain aneurysm):ti,ab,kw OR (cerebral aneurysm)

#3 #1 OR #2

#4 (flow diverter):ti,ab,kw OR (flow diversion):ti,ab,kw OR (flow diverting stent):ti,ab,kw OR (P64(device)):ti,ab,kw OR (Surpass Streamline):ti,ab,kw OR (Tubridge):ti,ab,kw OR (pipeline embolization):ti,ab,kw OR (pipeline flex):ti,ab,kw OR (pipeline device)

#5 #3 AND #4

2. Supplementary table

Table S1. Overview of the 18 included studies.

Author	year	FD Type	CV Type	Periods	Size	Aneurysm location	FD patient/ procedure No.	CEV patient /procedure No.	Type
Chalouhi	2013	PED	67Coiling+52SAC+1BAC	PED: 2011-2012 Coil: 2004-2011	Large	AC and PC	40/40	120/120	Matched
Yongxin Zhang	2016	Tubridge	Enterprise+Neuroform	2020-2014	Large	ICA and PC	45/45	45/45	Matched
Lanzino	2012	PED	14Coiling+2SAC+7BAC+8occlusion	PED: 2009-2011 CEV: 1999-2011	Both	Paraclinoid segment	21/21	21/21	Matched
Chalouhi	2014	PED	SAC	PED: 2011-2013 Coil: 2004-2011	Small	AC	40/40	160/160	Matched
Chalouhi	2017	PED	Coiling Embolization	2011-2015	Small	AC	40/40	40/40	Matched
Salem	2020	PED	SAC	PED: 2013-2017 SAC: 2009-2015	Small	AC	170/142	32/32	Matched
Durst	2016	PED	Coil Embolization		Both	Ophthalmic segment	19/19	38/38	Matched
Yupeng Zhang	2019	PED	SAC	PED: 2015-2016 SAC: 2015-2017	Both	Intradural vertebral artery	30/32	64/64	Matched
Peng Lu	2019	PED	LVIS	2016-2018	Small	MCA	20/28	23/32	No-Matched
Silva	2018	PED	Coiling	2011-2017	Both	Paraclinoid segment	62/64	23/23	No-Matched
Adeeb	2017	PED	SAC	2011-2016	Both	Ophthalmic segment	91/91	57/59	No-Matched
Petr	2016	124Pipeline+ 5Surpass	204Coiling+10SAC+9BAC	2009-2015	Both	AC and PC	122/129	188/233	No-Matched
Zanaty	2014	PED	22coiling+71SAC+15occlusion	2005-2014	Both	Cavernous segment	59/59	108/108	No-Matched
Di Maria	2015	55PED+SILK+ Surpass+FRED flow diverter	23SAC+32BAC+12both	2006-2013	Both	Ophthalmic artery	77/94	61/67	No-Matched
Kim	2014	PED	SAC	2007-2012	Both	Cavernous and Paraclinoid segment	23/24	38/41	No-Matched
Marulanda	2019	PED	SAC	PED: 2013-2017 SAC: 2008-2017	Both	Communicating segment	18/21	17/17	No-Matched
Liu	2018	Tubridge	SAC	-	Large	AC and PC	82/82	62/62	No-Matched
Wang	2019	31Pipeline+ 13PED	11Stent+28SAC	2014-2018	Large	Vertebrobasilar artery	42/44	36/39	No-Matched

LVIS: low-profile visualized intraluminal support; PED: pipeline embolization device; SAC: stent-assisted coiling; BAC: balloon-assisted coiling; AC: anterior circulation; PC: posterior circulation.

3. Supplementary pictures

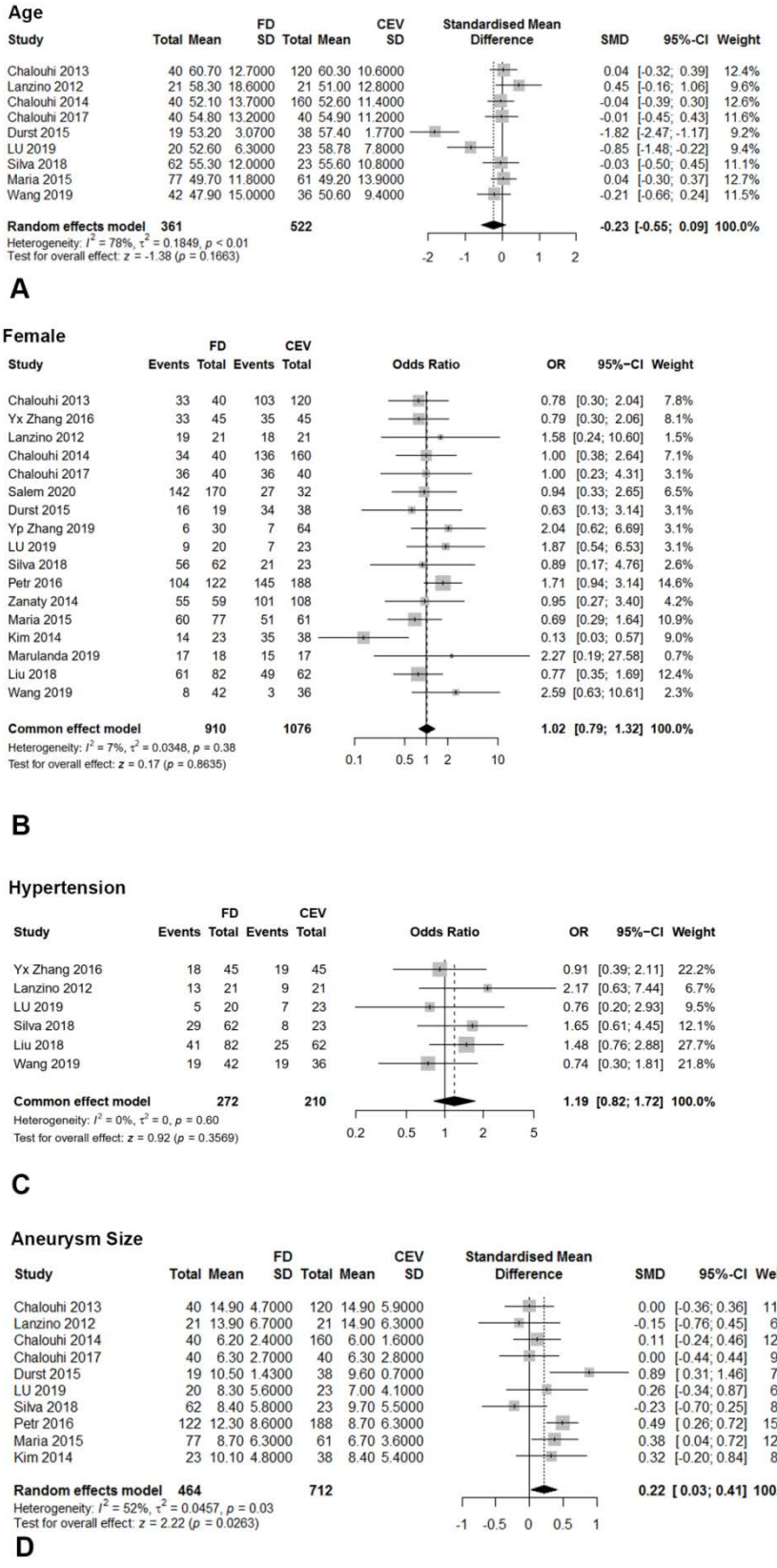


Figure S1. The pooled results of meta-analysis for baseline characteristics of FD and CEV. (A)

comparison of age; (B) comparison of female proportion; (C) comparison of hypertension rate; (D) comparison of aneurysm size.

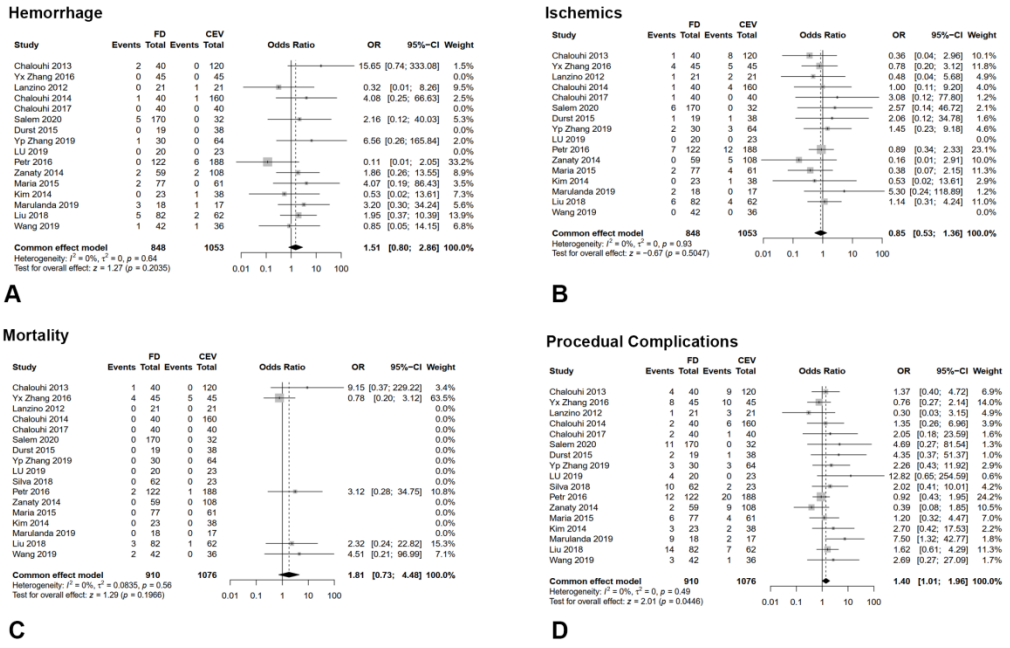


Figure S2. The pooled results of meta-analysis for the perioprocedural complications of FD and CEV. (A) comparison of hemorrhage rate; (B) comparison of ischemic rate; (C) comparison of mortality rate; (D) comparison of all procedural complication.

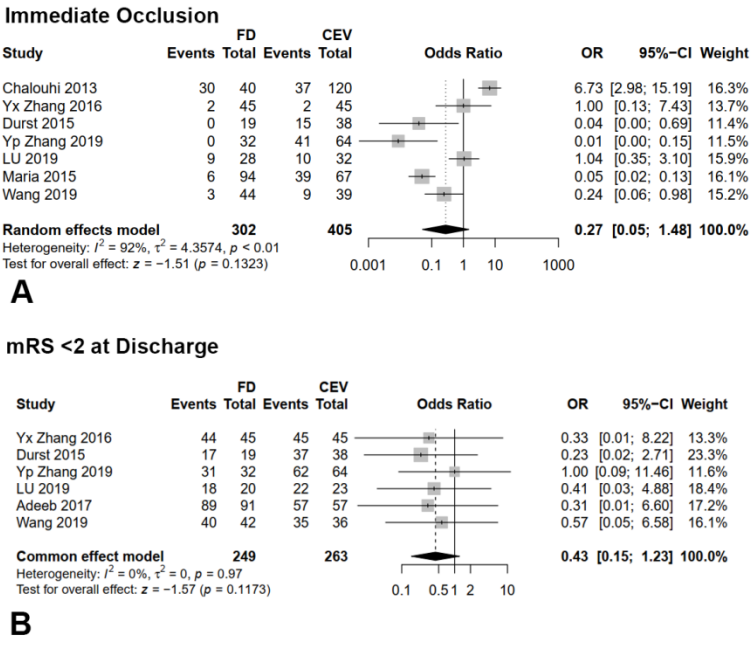
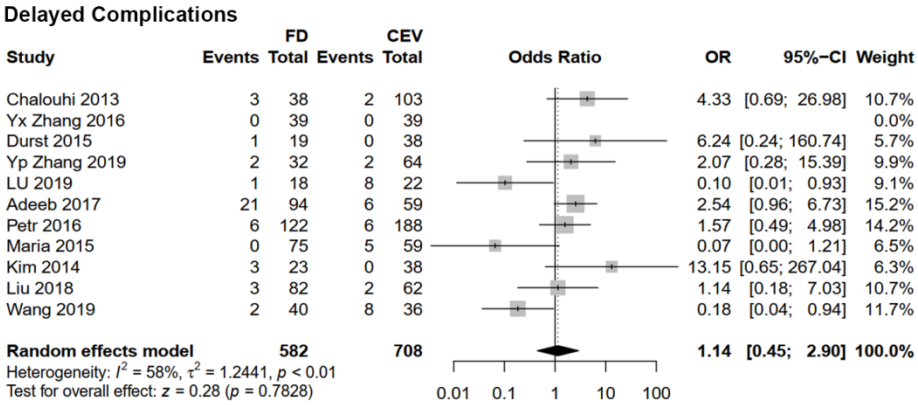
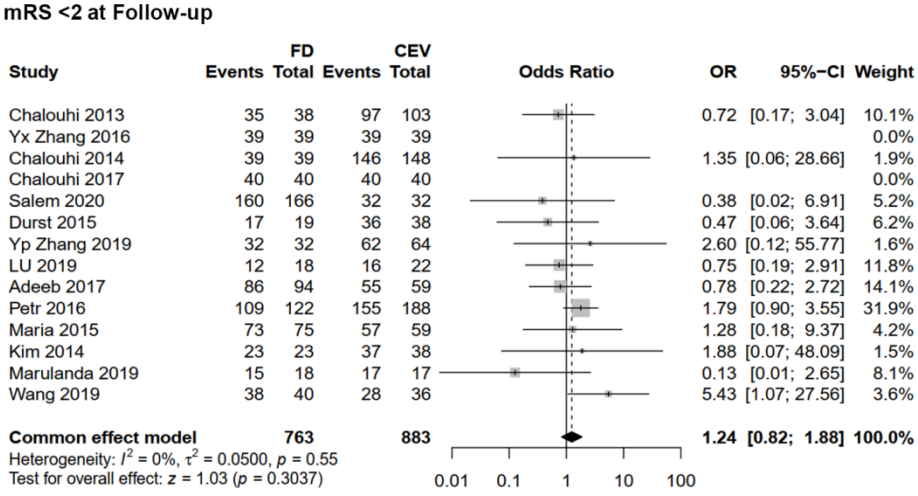


Figure S3. The pooled results of meta-analysis for the immediate occlusion rate (A) and better outcome at discharge (B) of FD and CEV.



A



B

Figure S4. The pooled results of meta-analysis for the delayed complications (A) and better outcome at last follow-up (B) of FD and CEV.

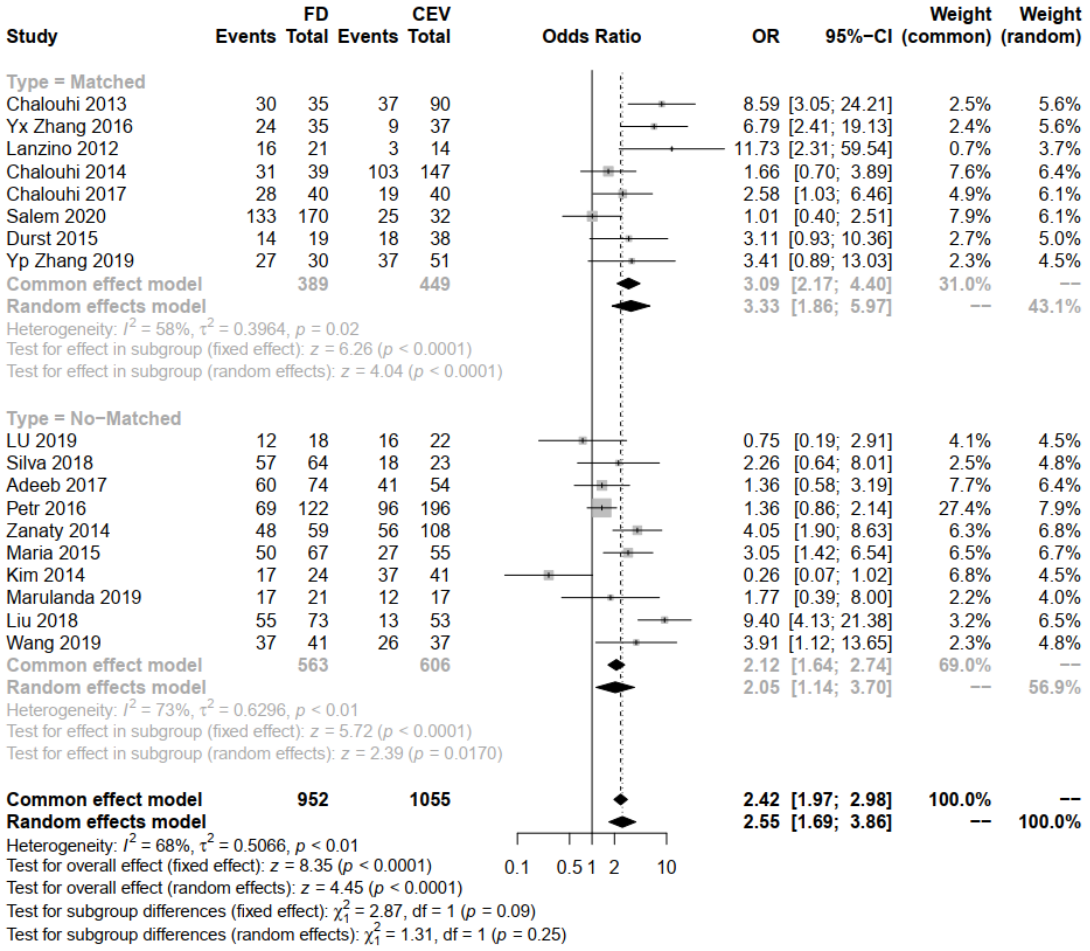


Figure S5. The subgroup analysis based on the study type to find the source of heterogeneity for the follow-up complete occlusion rate.

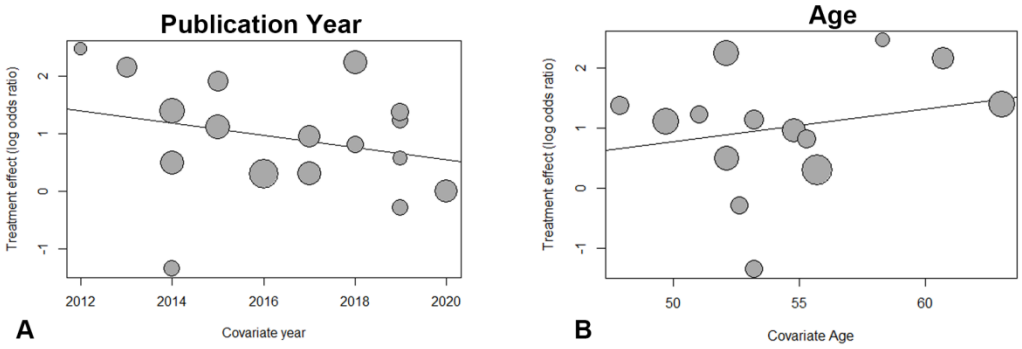


Figure S6. The meta-regression of covariate year (A) and age (B) to find the source of heterogeneity for the follow-up complete occlusion rate.

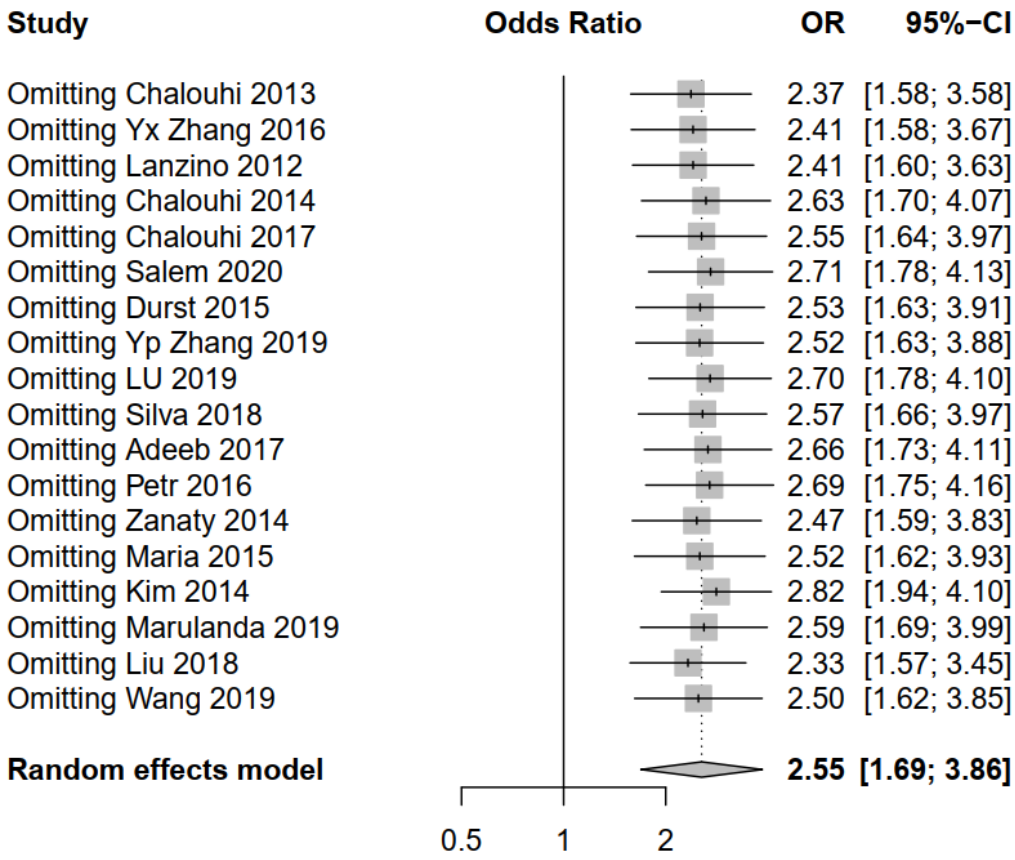


Figure S7. The sensitive analysis by omitting 1 study sequentially.

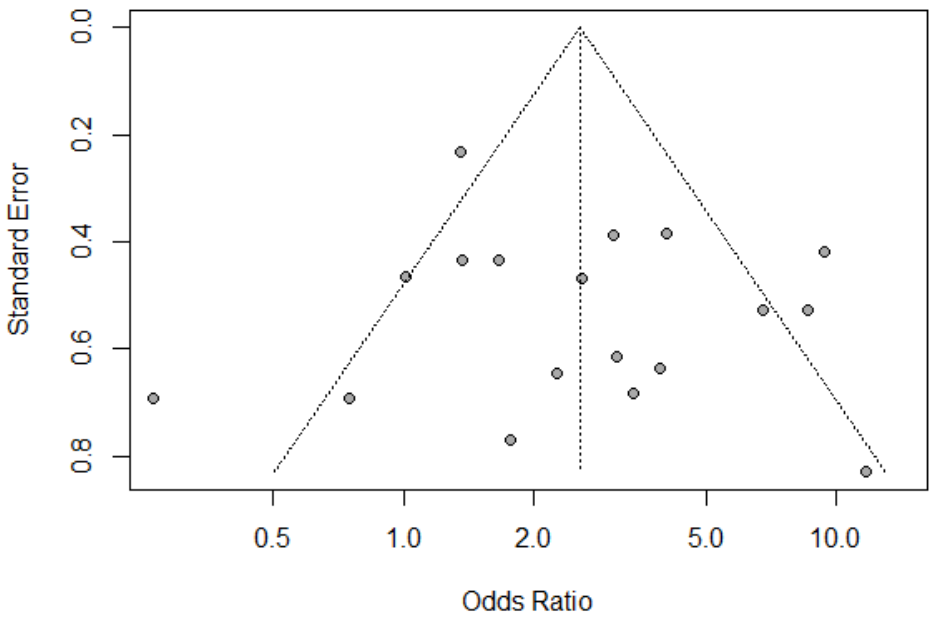


Figure S8. The funnel plot to find publication bias.