

# **SUPPLEMENTAL MATERIAL**

**Table S1.** List of included studies

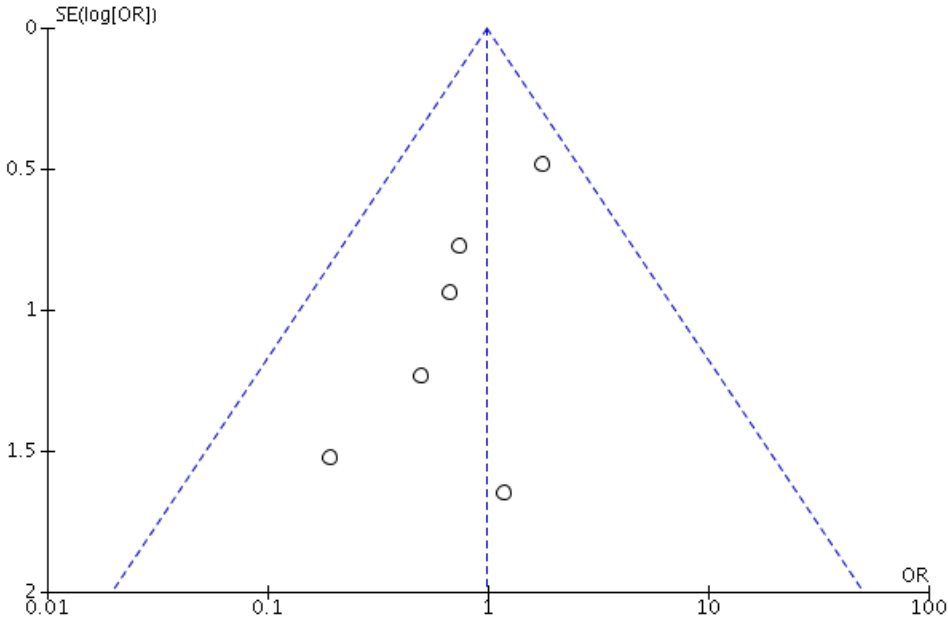
First author	Year	Institution	Study period	Type of study	Type of SU	Number SU	Number AVR	Mean follow up SU (years)	Mean follow up AVR (years)
Muneretto[1]	2014	University of Brescia, Italy	October 2010 to February 2013	PSM	Perceval S	204	204	1.9±0.6	2±0.8
Gilmanov[2]	2014	Pasquinucci Hospital, Massa, Italy	August 2004 to January 2014	PSM	Perceval S	133	133	1.5±0.6	4.5±1.5
Dalen[3]	2015	Six European Centers	June 2007 to April 2014	PSM	Perceval S	171	171	2.7±2.1	4.2±1.7
Santarpino[4]	2013	Klinikum Nurnberg, Nuremberg, Germany	March 2010 to December 2011	POS	Perceval S	50	50	none	none
D'Onofrio[5]	2012	Three Italian Centers	March 2011 to September 2011	PSM	Perceval S	31	112	none	none
Shrestha[6]	2013	Hannover Medical school, Germany	April 2007 to December 2012	RS	Perceval S	50	70	1.8±1.4	2.6±1.3

PSM: propensity score match; POS: prospective observational study, RS: retrospective study

**Figure S1.** Risk of bias summary: review authors' judgements about each risk of bias item for included study.

	Random sequence generation (selection bias)	Allocation concealment (selection bias)	Blinding of participants and personnel (performance bias)	Blinding of outcome assessment (detection bias)	Incomplete outcome data (attrition bias)	Selective reporting (reporting bias)
D'onofrio 2012	⊖	⊕	⊖	⊖	⊖	⊖
Dalen 2015	⊖	⊕	⊕	⊖	⊖	⊕
Gilmanov 2014	⊖	⊕	⊕	⊕	⊕	⊖
muneretto 2015	⊖	⊕	⊕	⊖	⊕	⊖
Santarpino 2013	⊖	⊖	⊖	⊖	⊕	⊕
Shrestha 2013	⊖	⊖	⊖	⊕	⊖	⊖

**Figure S2.** Funnel plot for the meta analysis of the mortality of Perceval valve compared with conventional prosthesis.



## Supplemental References:

1. Muneretto C, Bisleri G, Moggi A, Di Bacco L, Tespili M, Repossini A, Rambaldini M. Treating the patients in the “grey-zone” with aortic valve disease: a comparison among conventional surgery, sutureless valves and transcatheter aortic valve replacement. *Interact Cardiovasc Thorac Surg*. 2015;20:90–5.
2. Gilmanov D, Miceli A, Ferrarini M, Farneti P, Murzi M, Solinas M, Glauber M. Aortic valve replacement through right anterior minithoracotomy: can sutureless technology improve clinical outcomes? *Ann Thorac Surg*. 2014;98:1585–92.
3. Dalén M, Biancari F, Rubino AS, Santarpino G, Glaser N, De Praetere H, Kasama K, Juvonen T, Deste W, Pollari F, Meuris B, Fischlein T, Mignosa C, Gatti G, Pappalardo A, Svenarud P, Sartipy U. Aortic valve replacement through full sternotomy with a stented bioprosthesis versus minimally invasive sternotomy with a sutureless bioprosthesis. *Eur J Cardiothorac Surg*. 2016;49:220–7.
4. Santarpino G, Pfeiffer S, Concistré G, Grossmann I, Hinzmann M, Fischlein T. The Perceval S aortic valve has the potential of shortening surgical time: does it also result in improved outcome? *Ann Thorac Surg*. 2013;96:77-81-2.
5. D’Onofrio A, Rizzoli G, Messina A, Alfieri O, Lorusso R, Salizzoni S, Glauber M, Bartolomeo R Di, Besola L, Rinaldi M, Troise G, Gerosa G. Conventional surgery, sutureless valves, and transapical aortic valve replacement: what is the best option for patients with aortic valve stenosis? A multicenter, propensity-matched analysis. *J Thorac Cardiovasc Surg*. 2013;146:1065-70-1.
6. Shrestha M, Maeding I, Höffler K, Koigeldiyev N, Marsch G, Siemeni T, Fleissner F, Haverich A. Aortic valve replacement in geriatric patients with small aortic roots: are sutureless valves the future? *Interact Cardiovasc Thorac Surg*. 2013;17:778–82; discussion 782.