

Supplementary File 3 Quality assessment results

Cohort/before and after studies assessed using QUADAS-2 (n=28)

Study	Study design	Risk of bias level of concern				Applicability level of concern		
		Patient selection	Index test	Reference standard	Flow and timing	Patient selection	Index test	Reference standard
Perry, 2010 ²⁵	Prospective cohort study	Unclear	Low concern	Low concern	Low concern	Low concern	Low concern	High concern
Matloob, 2013 ²⁴	Retrospective cohort study	Low concern	Unclear	Unclear	High concern	Low concern	Unclear	Low concern
MacDonald, 2012 ²³ (abstract)	Retrospective cohort study	Unclear	Unclear	Low concern	Unclear	Unclear	Unclear	Low concern
Kelly, 2014 ²²	Retrospective cohort study	Low concern	High concern	Low concern	High concern	High concern	Unclear	Low concern
Perry, 2013 ²⁶	Prospective cohort study	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern
Yiangou, 2017 ²⁷ (poster)	Retrospective cohort study	Unclear	Unclear	Low concern	Low concern	Low concern	Unclear	Low concern
Perry, 2017 ³²	Prospective cohort study	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern
Bellolio, 2015 ²⁸	Retrospective cohort study	Unclear	Unclear	Unclear	Low concern	Unclear	Unclear	Low concern
Wu, 2019 ³⁴	Retrospective cohort study	Low concern	Unclear	High concern	High concern	Unclear	Unclear	Unclear
Chu, 2018 ³⁰	Retrospective cohort study	Unclear	Unclear	Low concern	Low concern	Unclear	Unclear	Low concern
Pathan, 2018 ³¹	Retrospective cohort study	Low concern	Unclear	Low concern	Unclear	Low concern	Unclear	Low concern
Cheung, 2018 ²⁹	Retrospective cohort study	Low concern	Unclear (Ottawa SAH Rule) High concern (modified Ottawa SAH Rule)	Low concern	Low concern	Low concern	High concern	Low concern
Perry, 2020 ³³	Prospective before/after implementation study	Low concern	Low concern	Low concern	Low concern	Low concern	Unclear	Low concern

Study	Study design	Risk of bias level of concern				Applicability level of concern		
		Patient selection	Index test	Reference standard	Flow and timing	Patient selection	Index test	Reference standard
Perry, 2008 ³⁹	Prospective cohort study	Low concern	Low concern	Low concern	Low concern	Low concern	High concern	Low concern
Valle Alonso, 2018 ⁴⁰	Retrospective cohort study	Unclear	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern
Cooper, 2016 ³⁶	Retrospective cohort study	Low concern	Unclear	Low concern	Unclear	Low concern	Low concern	Low concern
Blok, 2015 ³⁵	Retrospective cohort study	Low concern	Low concern	Unclear	Unclear	High concern	Low concern	Low concern
Khan, 2017 ⁴²	A priori planned secondary analysis of two sequential prospective cohort studies	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	High concern
Perry, 2011 ⁴³	Prospective cohort study	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	High concern
Backes, 2012 ⁴¹	Retrospective cohort study	Low concern	Low concern	Low concern	Low concern	High concern	Unclear	Low concern
Austin, 2018 ⁴⁴	Retrospective cohort study	Unclear	High concern (index test was interpreted on inferior screens to reference standard)	Unclear	Low concern	High concern	Unclear	Unclear
Perry, 2015 ⁴⁹	Sub-study of a prospective cohort study	Low concern	High concern	Low concern	Unclear	High concern	High concern	High concern
Dupont, 2008 ⁴⁶	Retrospective cohort study	Low concern	Low concern	Low concern	Low concern	Low concern	High concern	Low concern
Gangloff, 2015 ⁵¹	Retrospective cohort study	Low concern	Low concern	Low concern	Unclear	Unclear	Low concern	Low concern
Perry, 2006 ⁵²	Sub-study of a prospective cohort study	Low concern	Low concern	Low concern	Low concern	High concern	High concern	High concern

Study	Study design	Risk of bias level of concern				Applicability level of concern		
		Patient selection	Index test	Reference standard	Flow and timing	Patient selection	Index test	Reference standard
Heiser, 2015 ⁵³ (presentation)	Retrospective cohort study	Low concern	Unclear	Unclear	Unclear	Unclear	Unclear	Unclear
Perry, 2005 ⁵⁷	Prospective cohort study	Low concern	Low concern	Low concern	Low concern	Low concern	Unclear	Low concern
Backes, 2015 ⁵⁸	Retrospective cohort study	Low concern	Low concern	High concern	High concern	High concern	Unclear	Low concern
Total	6 prospective cohort studies 18 retrospective cohort studies 1 before/after study 1 secondary analysis 2 sub-studies	21 low concern 7 unclear 0 high concern	15 low concern 10 unclear 3 high concern	21 low concern 5 unclear 2 high concern	17 low concern 7 unclear 4 high concern	15 low concern 6 unclear 7 high concern	9 low concern 14 unclear 5 high concern	20 low concern 3 unclear 5 high concern

Cohort/before and after studies not eligible for QUADAS-2 (n=9)

Study	Study design	Clearly defined inclusion criteria	Representative sample*	Groups similar at baseline	Clearly described & consistent delivery of intervention*	Reliable and consistent outcome assessment*	Blinded outcome assessment	Outcome data complete/attrition low*	Adequate follow-up duration*	Overall judgement of risk of bias+
Perry, 2002 ³⁸	Retrospective cohort study	Yes	Yes	N/A	Unclear	Unclear	N/A	Yes	Yes	Unclear
Dutto, 2009 ³⁷	Before and after study	Yes	Yes	Yes	Yes	Unclear	N/A	Yes	Yes	Unclear
Migdal, 2015 ⁴⁸	Retrospective cohort study	Yes	Yes	N/A	Yes	Yes	N/A	Yes	Unclear	Unclear
Sansom, 2014 ⁵⁰ (poster)	Retrospective cohort study	Unclear	Yes	N/A	Unclear	Unclear	N/A	No	Unclear	High
Horstman, 2012 ⁴⁷	Retrospective cohort study	Yes	Yes	N/A	Yes	Yes	N/A	Yes	Yes	Low
Brunell, 2013 ⁴⁵	Retrospective cohort study	Yes	Yes	N/A	Yes	Yes	N/A	Yes	Yes	Low
Alons, 2015 ⁵⁴	Retrospective cohort study	Yes	Yes	N/A	Yes	Yes	N/A	Yes	Unclear	Unclear
Alons, 2018 ⁵⁵	Retrospective cohort study	No	Unclear	N/A	Yes	Yes	N/A	Yes	Unclear	Unclear
Locker, 2004 ⁵⁶	Retrospective cohort study	Yes	Yes	N/A	Unclear	Yes	N/A	Yes	Yes	Unclear

* Key domains.

+ Each study was given an overall risk of bias judgement; studies that had a low risk of bias for all key domains were judged to have a low overall risk of bias, studies that had a high risk of bias for one or more key domains were judged to have a high overall risk of bias, and studies that had an unclear risk of bias (and no high risk of bias) for one or more key domains were judged to have an unclear overall risk of bias.

Abbreviations: N/A, not applicable.