

Supplemental information 2

Risk of bias assessment

Two authors (EK/DG) independently assessed the potential assessed risk of bias of the studies included using the *MINORS*, a methodological index for non-randomised studies.¹ The items were scored 0 if not reported; 1 when reported but inadequate; and 2 when reported and adequate. The global ideal score was 16 for non-comparative studies and 24 for comparative studies (supplemental information 2). As a higher event rate allows to give a more precise estimate of the influence of studied determinants we chose to select the number of events to include in our risk of bias assessment (score 2: A for >500 events, B for 100-500 events and C if less events occurred) , and together with the presence of revisits as primary outcome measure (score 1: A for revisits as primary outcome and B if not) the total risk of bias was assessed (supplemental information 3). We considered low risk of bias when studies fulfilling all *MINORS* criteria; or studies scored a minimum of two A's in score 1 and 2; or studies scored a minimum of B in score 1, 2 and *MINORS*. We considered high risk of bias in all other studies (supplemental information 3). If only abstracts were available they were automatically judged to be at high risk of bias. Consensus was reached by the two reviewers (EK/DG) when there was difference in opinion on an item. If no consensus was reached, the independent opinion of a third reviewer was decisive (RO).

Data analysis - best-evidence synthesis

A narrative 'best-evidence' synthesis based on the study of Tulder et al.(11) was carried out, as meta-analysis of results was not possible owing to heterogeneity in participants, interventions, outcome measures and methodological quality.(11) We performed separate syntheses for the two separated study aims. Strong evidence was defined as two or more studies with low risk of bias and generally consistent findings in all studies ($\geq 75\%$ of the studies reported consistent findings). Moderate evidence was defined as one study with low risk of bias and/or two or more studies with high risk of bias and generally consistent results. Limited evidence was defined as generally consistent findings were found in one study with high risk of bias. Conflicting evidence was defined as less than 75% of the studies reported consistent findings.

Table 1: individual MINORS score

	Clearly stated aim	Inclusion of consecutive patients	Prospective data collection	Endpoints appropriate to study aim	Unbiased assessment of study endpoint	Follow-up period appropriate to study aim	<5% lost to follow-up	Prospective calculation of study size	Adequate control group	Contemporary groups	Baseline equivalence of groups	Adequate statistical analyses	Total
Alessandrini 2004 ²	2	2	1	2	2	2	2	0	NA	NA	NA	NA	13/16
Ali 2012 ³	2	1	2	2	2	2	1	0	NA	NA	NA	NA	12/16
Angoulvant 2013 ⁴	2	1	2	2	1	2	1	0	NA	NA	NA	NA	11/16
Augustine 2013 ⁵	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Baker 2009 ⁶	2	1	2	2	2	1	2	2	2	2	2	2	22/24
Berry 2013 ⁷	2	1	1	2	2	1	2	0	NA	NA	NA	NA	11/16
Black 2010 ⁸	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bloch 2013 ⁹	2	2	2	2	2	2	1	0	2	2	2	2	21/24
Browne 2001 ¹⁰	2	2	2	2	2	1	2	0	2	1	2	2	20/24
Callery 2010 ¹¹	2	2	1	2	2	2	2	0	NA	NA	NA	NA	13/16
Chang 2008 ¹²	2	1	1	2	2	2	0	0	2	2	2	2	18/24
Considine 2007 ¹³	2	1	2	2	2	2	2	0	2	2	2	2	21/24
DePiero 2002 ¹⁴	2	2	1	2	2	2	2	0	NA	NA	NA	NA	13/16
Dunlop 2005 ¹⁵	2	2	1	2	2	0	2	0	NA	NA	NA	NA	11/16
Easter 2012 ¹⁶	2	2	1	2	2	2	1	0	NA	NA	NA	NA	12/16
Fagbuyi 2011 ¹⁷	2	2	2	2	2	2	2	0	2	1	2	2	21/24
Florin 2013 ¹⁸	2	2	1	2	2	2	2	0	NA	NA	NA	NA	13/16
Freedman 2013 ¹⁹	2	2	1	2	2	2	1	1	NA	NA	NA	NA	13/16
Gallagher 2013 ²⁰	2	2	1	2	2	2	2	0	NA	NA	NA	NA	13/16

Roggen 2012 ⁴⁹	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Samuels-Kalow 2013 ⁵⁰	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sartain 2002 ⁵¹	2	1	2	2	2	1	2	2	2	2	2	2	22/24
Scarfone 1996 ⁵²	2	1	2	2	2	2	2	0	NA	NA	NA	NA	13/16
Seow 2007 ⁵³	2	2	1	2	2	2	2	0	NA	NA	NA	NA	13/16
Simmons 2012 ⁵⁴	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Small 2005 ⁵⁵	2	2	2	2	2	2	2	2	2	2	2	2	24/24
Yang 2012 ⁵⁶	2	2	2	2	2	2	1	0	2	1	2	2	20/24
Zimmerman 1996 ⁵⁷	2	2	1	2	2	2	2	0	NA	NA	NA	NA	13/16

Table 2.1: Risk of bias assessment

Score 1: Revisit primary outcome		Score 2: Number of events (revisits)		Score 3: MINORS score	
Yes	A	>500	A	16 or 24	A
No	B	100-500	B	>12 - <16 or >20 - <24	B
		<100	C	≤12 or ≤20	C

Risk of bias (low/ high)

Low risk of bias:

1. Studies fulfilling all MINORS criteria (A)
2. Full article with a minimum of 2 A's in score 1 and 2
3. Minimum of B in score 1, 2 and MINORS

High risk of bias:

1. all other studies

Table 2.2: Risk of bias assessment

Author Year Country	Revisits primary outcome	Score 1	N outcome (revisits)	Score 2	MINORS quality score*	Score 3	Risk of bias (low/ high)
<i>Alessandrini</i> 2004 USA	Yes	A	1,893	A	13/16	B	Low risk of bias
<i>Ali</i> 2012 USA	Yes	A	124	B	12/16	C	High risk of bias
<i>Angoulvant</i> 2012 France	Yes	A	206	B	11/16	C	High risk of bias
<i>Augustine</i> 2013 USA	Yes	A	13	B	NA	NA	High risk of bias
<i>Baker</i> 2009 USA	Yes	A	105	B	22/24	B	Low risk of bias
<i>Berry</i> 2013 USA	Yes	A	36,734	A	11/16	C	Low risk of bias
<i>Black</i> 2010 UK	Yes	A	91	C	NA	NA	High risk of bias
<i>Bloch</i> 2013 USA	No	B	216	B	21/24	B	Low risk of bias
<i>Browne</i> 2001 Australia	Yes	A	240	B	20/24	C	High risk of bias
<i>Callery</i> 2010 UK	Yes	A	2,433	A	13/16	B	Low risk of bias
<i>Chang</i> 2008 Taiwan	No	B	188	B	18/24	B	Low risk of bias

<i>Considine</i> 2007 Australia	No	B	15	C	21/24	B	High risk of bias
<i>DePiero</i> 2002 USA	Yes	A	261	B	13/16	B	Low risk of bias
<i>Dunlop</i> 2005 Australia	No	B	35	C	11/16	C	High risk of bias
<i>Easter</i> 2012 USA	Yes	A	1,091	A	12/16	C	Low risk of bias
<i>Fagbuyi</i> 2011 USA	No	B	620	A	21/24	C	High risk of bias
<i>Florin</i> 2013 USA	Yes	A	6,439	A	13/16	B	Low risk of bias
<i>Freedman</i> 2013 Canada	Yes	A	543	A	13/16	B	Low risk of bias
<i>Gallagher</i> 2013 USA	Yes	A	1,499	A	13/16	B	Low risk of bias
<i>Gaucher</i> 2012 Canada	No	B	2,534	A	14/16	B	Low risk of bias
<i>Goldman</i> 2006 Canada	Yes	A	1,990	A	21/24	B	Low risk of bias
<i>Goldman</i> 2011 Canada	Yes	A	353	B	20/24	C	High risk of bias
<i>Hacking</i> 2012 UK	Yes	A	130	B	NA	NA	High risk of bias
<i>Gregor</i> 2009 USA	No	B	49	C	15/16	B	High risk of bias
<i>Horne</i> 1995 USA	No	B	171	B	14/16	B	Low risk of bias
<i>Ismail</i> 2013 USA	No	B	63	C	NA	NA	High risk of bias
<i>Jacobstein</i> 2005 USA	Yes	A	165	B	22/24	B	Low risk of bias
<i>Jain</i> 2010 USA	No	B	17,335	A	21/24	B	Low risk of bias
<i>Klein-Kremer</i> 2011 Canada	Yes	A	92	C	20/24	C	High risk of bias
<i>Lal et al.</i> 1999 UK	Yes	A	65	C	13/16	B	High risk of bias
<i>Lawrence</i> 2009 USA	Yes	A	979	A	20/24	C	High risk of bias
<i>LeDuc</i> 2006 USA	Yes	A	237	B	11/16	C	High risk of bias
<i>Liberman</i> 2012 USA	No	B	189	B	13/16	B	Low risk of bias
<i>Logue</i> 2013 Canada	Yes	A	261	B	11/16	C	High risk of bias

<i>Maguire</i> 2011 UK	No	B	29	C	10/16	C	High risk of bias
<i>Mansbach</i> 2008 USA	No	B	837	A	22/24	B	Low risk of bias
<i>Michelson</i> 2012 USA	No	B	7,281	A	12/16	C	High risk of bias
<i>Mintegui</i> 2000 Spain	Yes	A	495	B	NA	NA	High risk of bias
<i>Mistry</i> 2007 USA	Yes	A	76	C	14/16	B	High risk of bias
<i>Mistry</i> 2009 USA	No	B	18	C	15/16	B	High risk of bias
<i>Moineau</i> 2004 Canada	Yes	A	108	B	NA	NA	High risk of bias
<i>Roback</i> 1997 USA	Yes	A	57	C	22/24	B	High risk of bias
<i>O'Loughlin</i> 2012 UK	Yes	A	532	A	10/16	C	High risk of bias
<i>O'Neill</i> 2001 USA	No	B	NS	C	6/16	C	High risk of bias
<i>Patel</i> 2009 USA	No	B	NA	C	21/24	B	High risk of bias
<i>Porter</i> 2000 USA	No	B	NA	C	10/16	C	High risk of bias
<i>Roggen</i> 2012 Belgium	Yes	A	1,864	A	NA	NA	High risk of bias
<i>Roland</i> 2011 UK	No	B	NR	NA	NA	NA	High risk of bias
<i>Samuels-Kalow</i> 2013 USA	Yes	A	14	C	NA	NA	High risk of bias
<i>Sartain</i> 2002 UK	No	B	31	C	22/24	B	High risk of bias
<i>Scarfone</i> 1996 USA	No	B	91	C	13/16	B	High risk of bias
<i>Seow</i> 2007 Taiwan	No	B	115	B	13/16	B	Low risk of bias
<i>Simmons</i> 2012 UK	Yes	A	51	C	NA	NA	High risk of bias
<i>Small</i> 2005 UK	No	B	56	C	24/24	A	Low risk of bias
<i>Yang</i> 2012 Taiwan	Yes	A	9	C	20/24	C	High risk of bias
<i>Zimmerman</i> 1996 USA	Yes	A	242	B	13/16	B	Low risk of bias

Legend supplemental information 3:

* Minors: 1. clearly stated aim; 2. inclusion of consecutive patients; 3. prospective data collection; 4. endpoints appropriate to study aim; 5. unbiased assessment of study endpoint; 7. <5% lost to follow-up; 8. prospective calculation of study size; *Additional criteria in the case of comparative study*: 9. adequate control group; 10. contemporary groups; 11. baseline equivalence; 12. adequate statistical analyses

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