SUPPLEMENTAL DIGITAL CONTENT

Table SDC 1 Search strategy in PubMed

Search #	Queries
1 (Constipation)	"constipation"[MeSH Terms] OR "constipation"[All Fields]
2 (Polyethyleneoxide)	"polyethylene glycols"[MeSH Terms] OR ("polyethylene"[All Fields] AND "glycols"[All Fields]) OR "polyethylene glycols"[All Fields] OR "polyethyleneoxide"[All Fields]
3 (Polyoxyethylene)	"polyethylene glycols"[MeSH Terms] OR ("polyethylene"[All Fields] AND "glycols"[All Fields]) OR "polyethylene glycols"[All Fields] OR "polyoxyethylene"[All Fields]
4 (Glycol)	"glycols"[MeSH Terms] OR "glycols"[All Fields] OR "glycol"[All Fields]
5 (Glycols)	"glycols"[MeSH Terms] OR "glycols"[All Fields]
6 (Baby)	"infant, newborn"[MeSH Terms] OR ("infant"[All Fields] AND "newborn"[All Fields]) OR "newborn infant"[All Fields] OR "baby"[All Fields] OR "infant"[MeSH Terms] OR "infant"[All Fields]
7 (Babies)	"infant"[MeSH Terms] OR "infant"[All Fields] OR "babies"[All Fields]
8 (Infant)	"infant"[MeSH Terms] OR "infant"[All Fields]
9 (Infants)	"infant"[MeSH Terms] OR "infant"[All Fields] OR "infants"[All Fields]
10 (Infancy)	"Infancy"[Journal] OR "infancy"[All Fields]
11 (Child)	"child"[MeSH Terms] OR "child"[All Fields]
12 (Children)	"child"[MeSH Terms] OR "child"[All Fields] OR "children"[All Fields]
13 (Childhood)	"Childhood"[Journal] OR "childhood"[All Fields]
14 (Girl)	"women"[MeSH Terms] OR "women"[All Fields] OR "girl"[All Fields]
15 (Girls)	"women"[MeSH Terms] OR "women"[All Fields] OR "girls"[All Fields]

Search #	Queries
16 (Boy)	"men"[MeSH Terms] OR "men"[All Fields] OR "boy"[All Fields]
17 (Boys)	"men"[MeSH Terms] OR "men"[All Fields] OR "boys"[All Fields]
18	2 OR 3 OR 4 OR 5
19	6 OR 7 OR 8 OR 9 OR 10 OR 11 OR 12 OR 13 OR 14 OR 14 OR 15 OR 16 OR 17
20	1 AND 18 AND 19
21	20 Filters activated: English and Publication date from 2000/01/01 to 2018/08/31

SUPPLEMENTAL DIGITAL CONTENT

TABLE SDC 2 Characteristics of included studies

Author	Country	Study Design	N (M, F)	Type of PEG	Age of Participants	Findings	Adverse effects
Bekkali (7)	Netherlands	RCT	97 (40, 57)	PEG3350+E versus PEG4000 without electrolytes	PEG3350+E : 5.5 y ± 3.9*	• Mean daily dose age group ≤24 mo: 0.45 g/kg/day • Daily sachet use for ≤24 mo age: 0.4 to 2.3 • Mean daily sachet use for ≤24 mo age: 1.74 (SD 0.78) • Mean reduction in TSS at week 52 compared to baseline was -3.81 (95% CI: -4.96, -2.65) • Length of use: mean duration 261 days (SD 147) • 50% treatment success at 52 weeks	Drug related: • Nausea (n=2) • Vomiting (n=1) Serious AE: • Dehydration (n=1) • Upper respiratory infection (n=1) • Metabolic acidosis (n=1) • Constipation (n=1)
					PEG4000: 5.0 y ± 3.3*	• Mean daily dose age group ≤24 mo: 0.65 g/kg/day • Daily sachet use for ≤24 mo age 0.9 to 2.1 • Mean daily sachet use for ≤24 mo age: 1.80 (SD: 0.60) • Mean reduction in TSS at week 52 compared to baseline was -3.74 (95% CI: -5.08, -2.40) • Length of use: mean duration 327 days (SD 88) • 45% treatment success at 52 weeks	Drug related: • Abdominal pain (n=1) • Diarrhoea (n=1) • Vomiting (n=1) • Nasopharyngitis (n=1) • Headache (n=1)
Dupont (13)	France	RCT	96 (55, 41)	PEG4000	Starting dose 2.5 g/day: 6.4 mo (5.8 - 12.0)†	• Median daily dose age group 6-12 mo: 0.48 g/kg/day (range, 0.30-0.59) • Length of use: 84 days	Drug related: • Diarrhoea (n=32) • Abdominal pain (n=18)

Author	Country	Study Design	N (M, F)	Type of PEG	Age of Participants	Findings	Adverse effects
					Starting dose 5 g/day: 10.2 mo (5.9 - 12.0)[†]	• Clinical efficacy shown by 100% normalization of bowel habit at day 84 compared with baseline in Intention-to-treat population • Hard stool frequency decreased from 87% at baseline to 0% at day 84. • Stool frequency increased from median of 3 stools per week at baseline (range: 0-5) to 11 stools per week at day 84 (range: 5-20) • Abdominal faecal load at day 84 was not improved compared to baseline as seen in x-ray, independent of age and/or bowel habits	Serious AE: • Diarrhoea resulting in discontinuation (n=1) • Abdominal pain resulting in discontinuation (n=1)
Michail (6)	USA	Retrospective chart review	28 (Not specified)	PEG3350	7 weeks - 17 mo[‡]	• Mean initial dose: 0.88/kg/day • Mean effective maintenance dose: 0.78 g/kg/day • Length of use: average duration 6.2, SD 5 mo (range: 3 weeks-21 mo) • Mean stool frequency after therapy 8.4 (SD 2.5) movements per week (range: 5.0–14.0) compared to 2.2 (SD 1) movements per week at baseline (range: 1–5) ($p < 0.001$) • Mean stool consistency score after therapy of 3.8 (SD 0.8), compared to 1.7 (SD 0.5) at baseline ($p < 0.001$) • Maintenance dose was effective in 96.4% of patients	Drug related: • Transient diarrhoea that resolved after dose adjustment (n=4) Serious AE: • Increased passage of gas per rectum (n=1)
Loening-Baucke (14)	USA	Retrospective chart review	75 (36, 39)	PEG3350 without electrolytes	17 mo ± 7[*]	• Mean effective short-term dose: 1.1 g/kg/day • Mean effective long-term dose: 0.8 g/kg/day • Length of use: mean duration at short-term follow up 2.3 mo (SD 1.3) and mean duration at long-term follow up 0.6 mo (SD 8.1)	Drug related: • Diarrhoea at short-term follow up (n=5) • Diarrhoea at long-term follow up (n=1)

Author	Country	Study Design	N (M, F)	Type of PEG	Age of Participants	Findings	Adverse effects
						• Mean duration of constipation: 10 mo (range 1-24 mo) • At short term follow up, stool frequency per week and stool consistency had significantly improved from baseline ($p < 0.001$) • At long term follow up, stool frequency per week and stool consistency had also significantly improved from baseline, ($p < 0.001$), however the stool frequency per week was less than at short term follow up ($p < 0.05$) • At short and long term follow up, the frequency of hard stools, fear/withholding, blood with stools, rectal impaction and abdominal mass had all significantly decreased from baseline ($p < 0.001$) • PEG3350 treatment was successful in 85% and 91% of participants at short and long term follow up, respectively.	
Loening-Baucke (15)	USA	Retrospective chart review	172 (89, 83)	PEG3350 without electrolytes	16.12 mo ± 6.1*	• Mean daily dose: 1.0 ± 0.6 g/kg/day • Length of use: not specified • Frequency of BM per week increased from 6 (SD 6) at baseline to 9.4 (SD 5.5) after treatment ($p < 0.001$) • Stool consistency improved after treatment ($p < 0.001$) • Abdominal pain, stool withholding and presence of blood in stool decreased after treatment ($p < 0.001$). • Laxative treatment was successful in 92% of children	No adverse events

AE = adverse effects; F = female; PEG = polyethylene glycol; PEG3350+E = polyethylene glycol 3350 plus electrolytes; M = male; mo = months; n = number of patients; RCT = randomised control trial; SD = standard deviation; TSS = total sum score; y = years.

[*] Age as mean ± SD
[†] Age as median (range)
[‡] Age as range

SUPPLEMENTAL DIGITAL CONTENT

TABLE SDC 3 PEDro quality assessment for randomized controlled trials

Criteria	Bekkali *et al (12)*	Dupont *et al (13)*
1. Eligibility criteria were specified	Yes	Yes
2. Subjects were randomly allocated to groups (in a crossover study, subjects were randomly allocated an order in which treatments were received)	Yes	Yes
3. Allocation was concealed	Yes	Yes
4. The groups were similar at baseline regarding the most important prognostic indicators	Yes	Yes
5. There was blinding of all subjects	Yes	No
6. There was blinding of all therapists who administered the therapy	Yes	Yes
7. There was blinding of all assessors who measured at least one key outcome	No	Yes
8. Measures of at least one key outcome were obtained from more than 85% of the subjects initially allocated to groups	Yes	Yes
9. All subjects for whom outcome measures were available received the treatment or control condition as allocated or, where this was not the case, data for at least one key outcome was analyzed by "intention to treat"	Yes	Yes
10. The results of between-group statistical comparisons are reported for at least one key outcome	Yes	Yes
11. The study provides both point measures and measures of variability for at least one key outcome	Yes	Yes
Total	10	10

SUPPLEMENTAL DIGITAL CONTENT

Criteria	Bekkali 2007	Dupont 2005
Random sequence generation (selection bias)	+	?
Allocation concealment (selection bias)	+	?
Blinding (performance bias and detection bias)	+	+
Blinding of participants and personnel	+	?
Incomplete outcome data (attrition bias)	+	+
Selective reporting (reporting bias)	+	+
Other bias	+	+

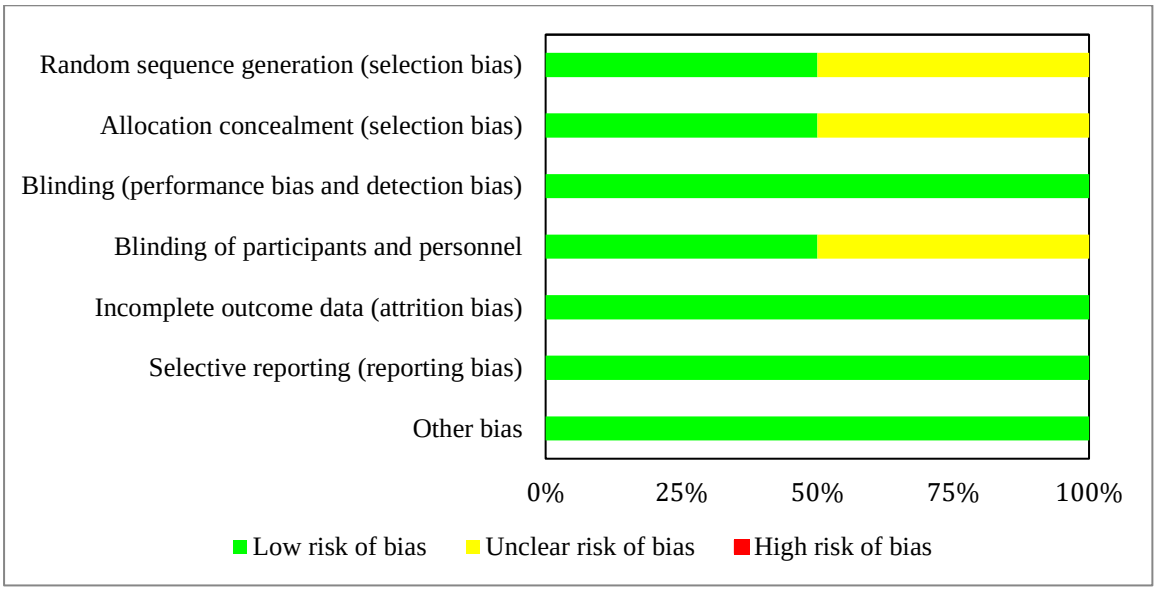

Figure SDC 4 Cochrane risk of bias tool for randomized controlled trials

SUPPLEMENTAL DIGITAL CONTENT

TABLE SDC 5 Newcastle-Ottawa assessment scale for retrospective chart reviews

Criteria	Loening-Baucke *et al (14)*	Loening-Baucke (15)	Michail *et al (7)*
Selection*			
1. Representativeness of the exposed cohort	B	B	B
2. Selection of the non exposed cohort	A	A	A
3. Ascertainment of exposure	A	A	A
4. Demonstration that outcome of interest was not present at start of study	A	A	A
Comparability†			
1. Comparability of cohorts on the basis of the design or analysis	A, B	A, B	A, B
Outcome‡			
1. Assessment of outcome	D	D	D
2. Was follow-up long enough for outcomes to occur	A	A	B
3. Adequacy of follow up of cohorts	C	D	D

* Selection: (1) Representativeness of the exposed cohort: A, truly representative; B, somewhat representative; C, selected group; and 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; and C, no description of the derivation of the non exposed cohort. (3) Ascertainment of exposure: A, secure record (eg, surgical records); B, structured interview; C, written self-report; D, no description, and E, other. (4) Demonstration that outcome of interest was not present at start of study: A, yes; B, no.

† Comparability: Comparability of cohorts on the basis of the design or analysis: A, study controls for age; B, study controls for other factors (such as treatment type); and C, cohorts are not comparable on the basis of the design of analysis controlled for confounders.

‡ Outcome: (1) Assessment of outcome: A, independent blind assessment; B, record linkage; C, self-report; D, no description, and E, other. (2) Was follow-up long enough for outcomes to occur: A, yes; 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 (loss ≤20%) or description provided of those lost no

different from those followed; C, follow up rate <80% and no description of those lost; and D, no statement.