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Reviewed: Nov 20,2019

Evidence Updated: Two systematic reviews and one randomized trial

Bottom Line: No change; addition of longer duration data

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Polyethylene Glycol (PEG) for Paediatric and Adult Chronic Constipation

Clinical Question: How effective is Polyethylene Glycol (PEG) in Paediatric and Adult Chronic Constipation?

Bottom-line: In adults and paediatric patients with chronic constipation, PEG is as or more effective than other agents. Compared to placebo, it relieves constipation in one in every 2-3 patients and adds 1-3 bowel movements per week. Maintenance treatment up to 24 weeks appears to be effective and safe in pediatric patients.

Evidence:

- At least ten systematic reviews of constipation with PEG versus other laxatives and/or placebo (range 5-25 trials, 594-2310 participants 2-52 weeks long):¹⁻¹⁰
 - Adults outcomes, statistically significant:
 - PEG versus placebo:^{1,2,3,4}
 - Relief of constipation: Number Needed to Treat (NNT)=2-3.
 - Increased stool frequency: 2-3 more per week.
 - PEG versus lactulose:^{3,5}
 - Increased stool frequency by 1-2 more per week; reduced need for additional interventions.
 - Paediatrics outcomes, statistically significant:
 - PEG versus placebo:^{6,7}
 - Increased stool frequency: 1.5 to 3 more per week.
 - PEG versus lactulose:^{5,6,7}
 - Increased stool frequency: 0.7 to 1.5 more per week.
 - Increased likelihood of successful disimpaction: NNT 5
 - PEG versus milk of magnesia:⁷
 - Increase in stool frequency: 0.7 more per week.
 - Multiple outcomes improved such as resolved constipation, reduced abdominal pain, and reduced need for additional interventions.^{5,7}
 - One review found no difference between PEG and other laxatives but excluded relevant studies.⁸
 - Other reviews found similar.^{9,10}
- RCTs have found similar efficacy to prucalopride¹¹, superior efficacy to lactulose¹² and efficacy in irritable bowel syndrome.¹³

- Recent RCT of pediatric patients (n=115) compared maintenance PEG vs placebo¹³; successful treatment 67% vs 32% placebo, NNT 3 over 24 weeks; no significant adverse events

Context:

- Chronic constipation impacts quality of life similar to diabetes and stable ulcerative colitis.¹⁵
- Compared to lactulose, PEG may be better tolerated² and is cost effective¹⁶ at approximately \$1.00 per day (at 17 grams/day).
- Although types of PEG vary in trials, this seems to have little impact on success.^{5,6}
- Current guidelines recommend PEG as the first line agent in paediatric^{17,18} and adult constipation.¹⁹
- In reviews of multiple agents versus placebo, PEG has better evidence (versus senna or docusate)² or better NNT (than psyllium or prucalopride).^{1,2}
- Dosing:
 - Adults, 17 grams daily.⁶
 - Paediatrics, 0.6 grams/kg/day (or 5-12 grams/day).⁶
 - Higher PEG doses (0.7 grams/kg/day) increases stool frequency over lower doses (0.3 grams/kg/day) by 1-2 more per week with no increase in adverse effects or fecal incontinence⁵
 - Titrate doses to symptom relief and adverse events (diarrhea).

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