Which is the optimal bowel preparation for colonoscopy – a meta-analysis

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Abstract

OBJECTIVE: To assess which bowel preparation agent is most effective.

METHODS: A search of randomized trials between January 1990 and July 2005 was obtained, using MEDLINE and PubMed databases, and the Cochrane Central Register of Controlled Trials. Meta-analysis was performed using the Forest plot review.

RESULTS: Sodium phosphate (NaP) was more effective in bowel cleansing than polyethylene glycol (PEG) – odds ratio 0.75 (95%CI: 0.65–0.88; \( P = 0.0004 \)); and sodium picosulphate (SPS) – odds ratio 0.52 (95%CI: 0.34–0.81; \( P = 0.004 \)). PEG and SPS were comparable in bowel cleansing ability, odds ratio 1.69 (95%CI: 0.92–3.13; \( P = 0.09 \)). NaP was more easily completed by patients compared to PEG, odds ratio 0.16 (95%CI: 0.09–0.29; \( P < 0.00001 \)). More patients were able to complete SPS than PEG, but this was not statistically significant – odds ratio 0.56 (95%CI: 0.28–1.13; \( P = 0.11 \)). NaP and PEG were comparable in terms of adverse events, odds ratio 0.98 (95%CI: 0.82–1.17; \( P = 0.81 \)), although NaP resulted in more asymptomatic hypokalaemia and hyperphosphataemia. NaP and SPS appeared to have similar incidence of adverse events. PEG resulted in more adverse events than SPS, odds ratio 3.82 (95%CI: 1.60–9.15; \( P = 0.003 \)).

CONCLUSIONS: NaP was more effective in bowel cleansing than PEG or SPS and was comparable in terms of adverse events. Patients have more difficulty completing PEG than NaP and SPS. Biochemical changes associated with a small-volume preparation like NaP, albeit largely asymptomatic, mandate caution in patients with cardiovascular or renal impairment.