Table 1—Results (No (%)) of screening and contact tracing schoolchildren with positive responses to Heaf and Mantoux tests

Heaf grade	No confirmed on Mantoux testing	Previous BCG	No from Indian subcontinent	No with active tuberculosis	Contacts of children with active tuberculosis			Contacts of Mantoux positive children		
					No	Active tuberculosis	Mantoux positive	No	Active tuberculosis	Mantoux positive
2	45	5	5	5 (11)	23	1 (4)	6 (26)	138	0 (0)	6 (4)
3	26	11	9	0 (0)				94	3 (3)	12 (13)
4	7	1	3	1 (14)	5	1 (20)	1 (20)	9	0 (0)	0 (0)
Total	78	17(22)	17(22)	6 (8)	28	2 (7)	7 (25)	241	3 (1)	18 (7)

with nodal tuberculosis. In addition, 18 further contacts of children who were Mantoux positive only were themselves found to be Mantoux positive. Thirteen of them were from the Indian subcontinent.

Comment

Our results suggest that all children with positive Heaf test results, including those with grade 2 results, should be referred for further assessment. In our clinic 62% of children with a grade 2 response on the school Heaf test and 26% of those with a grade 3 response were Mantoux negative and considered to have given false positive Heaf test results. Tuberculin status should therefore be confirmed before further investigations are undertaken. This may partly explain why our rate (11%) of tuberculosis in those with grade 2 Heaf test results is higher than that reported in other series.^{3 4}

A small percentage (2.9%) of contacts of children with grade 3 and 4 Heaf test responses but who were Mantoux positive only had active tuberculosis. This is a higher yield than that reported after contact tracing adult cases of pulmonary smear negative tuberculosis.⁵ Contact tracing a tuberculin positive child might be expected to be more likely to identify a source case, as being young they will have had fewer contacts and

infection will have occurred more recently. Our results emphasise the need for thorough household investigation of children with Heaf test responses of grade ≥ 3 . Contact tracing children referred with grade 2 Heaf test results, however, does not seem to be as worth while, though it identifies siblings who can then be offered chemoprophylaxis. Restricting contact tracing of Mantoux positive only children to those from the Indian subcontinent would have identified all cases of tuberculosis and 72% of tuberculin positive only contacts.

Funding: None.

Conflict of interest: None.

1 Joint Tuberculosis Committee of the British Thoracic Society. Control and prevention of tuberculosis in the United Kingdom: Code of Practice 1994. *Thorax* 1994;49:1193-200.

2 Joseph CA, Watson JM, Fern KJ. BCG immunisation in England and Wales: a survey of policy and practice in schoolchildren and neonates. *BMJ* 1992;305:495-8.

3 Capewell S, France A, Uzel N, Leitch AG. The current value of tuberculin testing and BCG vaccination in schoolchildren. *Br J Dis Chest* 1986;80:254-64.

4 Hollyoak V. High prevalence of tuberculin sensitivity. *Commun Dis Rep* 1992;2:R67.

5 British Thoracic and Tuberculosis Association. A study of a standardized contact procedure in tuberculosis. *Tubercle* 1978;59:245-59.

(Accepted 17 June 1996)

Bowel preparation at home: prospective study of adverse effects in elderly people

T D Heymann, K Chopra, E Nunn, L Coulter, D Westaby, I M Murray-Lyon

Bowel preparation for colonoscopy may be an unpleasant experience. Increasing pressure on hospital beds effectively precludes inpatient preparation except for the most immobile or infirm patients. Added costs and knowledge that preparation supervised in hospital may be less satisfactory than that done at home^{1 2} also counsel against inpatient preparation. However, the adverse effects of preparation at home may have hidden costs, and the likelihood of adverse effects may be particularly high in elderly people.

We assessed the adverse effects of bowel preparation at home, and in particular whether elderly people suffer more than younger people.

Patients, methods, and results

In a prospective study consecutive patients undergoing elective colonoscopy in these two hospitals were asked to complete a simple questionnaire designed to elicit adverse affects and overall tolerability of bowel preparation. Allocation of preparation (polyethylene glycol (Klean-Prep, Norgine) or sodium picosulphate (Picolax, Nordic)) was according to hospital and followed local practice. Nine identified side effects were

scored 0 to 2 depending on severity; the range of scores was therefore 0 to 18. As appropriate, statistical analysis was performed with the χ^2 test, unpaired *t* test, and Pearson correlation coefficient.

The colonoscopist's satisfaction with the preparation was established by retrospective audit of colonoscopy reports. All patients booked for elective colonoscopy were followed up for three months for serious adverse events from the preparation.

In all, 165 patients were studied, 83 having bowel preparation with sodium picosulphate and the remaining 82 with polyethylene glycol. The response rate was 100%. The mean age of both groups was 60 years (range 25-85 in those given sodium picosulphate and 22-86 in those given polyethylene glycol). The ratio of men to women was similar at both hospitals (0.95 and 0.93). Ten patients (two receiving sodium picosulphate, eight polyethylene glycol; $P < 0.01$) failed to take the full course of preparation. The colonoscopist considered the preparation inadequate in five patients (three receiving sodium picosulphate, two polyethylene glycol; $P > 0.05$), but none of the five had failed to complete bowel preparation. The mean side effect score was 2.9 out of a possible 18 (interquartile range 1-4) in those receiving sodium picosulphate and 3.8 (2-5) in those receiving polyethylene glycol ($P < 0.001$). Sodium picosulphate was rated significantly more favourably than polyethylene glycol (linear analogue score 7.8 (6-10) v 6.3 (4-9); $P < 0.001$).

Faecal incontinence was reported by 22 patients (13%)—10 had received sodium picosulphate, 12 polyethylene glycol ($P > 0.05$). Forty two patients reported sleep disturbance, 21 in each group. No patient

Department of Gastroenterology, Chelsea and Westminster Hospitals, London SW10 9NH

T D Heymann, research registrar

K Chopra, research fellow

E Nunn, endoscopy sister

D Westaby, consultant

physician

I M Murray-Lyon, consultant physician

Charing Cross Hospital, London W6 8RF

L Coulter, endoscopy sister

Correspondence to: Dr Westaby.

BMJ 1996;313:727-8

Bowel preparation questionnaire

Please fill in the blanks then circle the replies in the table and finally use the scale from 1 to 10 to give your impression of the overall rating of the bowel preparation

Once complete, please return this form to the nurse or doctor

Patient's hospital number: _____

Patient's age: _____

Other illnesses

(Please circle as many as apply)

Preparation taken

Completion of preparation course

Taste

Vomiting

Nausea

Fullness

Dizziness

Perianal soreness

Sleep disturbance

Abdominal cramps

Accidents/incontinence

Overall, how would you rate the preparation for their investigation on the following scale

(1 is least favourably, 10 most favourably):

1 2 3 4 5 6 7 8 9 10

Diagnosis: _____

Patient's sex

Diabetes

Ischaemic heart disease

Klean-Prep

More than half

Tolerable

Mild

Mild

Mild

Mild

Mild

Mild

Mild

One occasion

Other (please specify): _____

Other (please specify): _____

Less than half

Unpleasant

Severe

Severe

Severe

Severe

Severe

Severe

Severe

More than one occasion

Any other comment: _____

THANK YOU VERY MUCH FOR TAKING THE TROUBLE TO COMPLETE THIS FORM AND HELP US IN OUR RESEARCH.

required medical intervention such as admission, which was confirmed by follow up of patients who missed their colonoscopy appointments. There was no significant correlation between patients' overall rating of the bowel preparation and age ($r = 0.13$). However, younger patients complained more often than elderly people of taste disturbance ($P < 0.01$), nausea ($P < 0.05$), fullness ($P < 0.05$), and cramp ($P < 0.01$).

Comment

Our results suggest that age in itself is not a specific risk factor for adverse effects of bowel preparation. Indeed, young people report specific side effects more often than do elderly people. Perhaps elderly people are more stoical?

Side effects such as sleep disturbance, which may affect patients' partners as well as themselves, and faecal incontinence, which may cause considerable expense, are fairly common and should be considered both by physicians ordering colonoscopies and by economists comparing inpatient and outpatient preparation regimens.

Patients clearly preferred preparation with sodium picosulphate to that with polyethylene glycol. Failure to complete the course was more likely with polyethylene

glycol than sodium picosulphate. Polyethylene glycol may give better results,^{1 3} but as both preparations were satisfactory for colonoscopy we would recommend sodium picosulphate. Significant cost savings (59p v £8.60)⁴ could result.

Part of these results was used in an oral presentation at the 1995 spring meeting of the British Society of Gastroenterologists and has been published as an abstract in *Gut* 1996;36(suppl 1):A35.

Funding: None.

Conflict of interest: None.

1 Borkje B, Pederson R, Misje Lund G, Enehaug JS, Berstad A. Effectiveness and acceptability of three bowel cleansing regimens. *Scand J Gastroenterol* 1991;26:162-6.

2 Gurwitz JH, Noonan JP, Sanchez M, Prather W. Barium enemas in the frail elderly. *Am J Med* 1992;92:41-4.

3 Marshall JB, Barthel JS, King PD. Short report: prospective, randomized trial comparing a single dose sodium phosphate regimen with PEG-electrolyte lavage for colonoscopy preparation. *Aliment Pharmacol Ther* 1993;7:679-82.

4 British Medical Association, Royal Pharmaceutical Society of Great Britain. *British national formulary*. No 27. London: BMA, RPS, 1995:48-9.

(Accepted 18 March 1996)

ONE HUNDRED YEARS AGO

THE SLEEPING PLACES OF DOMESTIC SERVANTS.

IN a certain proportion of houses in the metropolis servants are compelled to sleep in dark unventilated cupboards, in underground rooms, or in other improper places. The class, as a rule, is composed of young persons peculiarly prone to succumb to septic influences and to contract diseases more or less dependent on insalubrious environment. The unhealthy sleeping places are most common in the central parts of the metropolis, more especially in lodging houses, in third-rate hotels, in boarding houses, and in a few places of business. The Factory Acts do not affect domestic servants; the Public Health (London) Act affords no special remedy, although it is true that should a servant be found sleep-

ing in a pantry or where food is stored, such a condition might be brought under the general head of nuisance. Some health officers appear to think that the sections in the Public Health Act relating to the occupation of underground rooms might be applied to those servants who sleep in kitchens; this is doubtful; the words of the Act are "let or occupied separately"; a servant can scarcely be said to occupy a kitchen separately when she has more or less the run of the whole house. When the sanitary statutes are amended and consolidated it would be well to insert some clause relating to unhealthy sleeping places of domestic servants, and thus remove a substantial grievance. (BMJ 1896;iii:87.)