Diarrhoea and vomiting in general practice

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SUMMARY. A series of 108 episodes of diarrhoea and vomiting occurring in 108 patients in National Health Service general practice was studied to assess, in terms of duration of illness and admissions to hospital, the effects of applying a no-antibiotic policy in routine management. Eighty one episodes (82·7 per cent) of simple uncomplicated diarrhoea and vomiting had settled within 72 hours, with no admissions to hospital from this group, on a regimen of dilute saline solution only for the first 24 hours.

In a second group of 26 episodes of diarrhoea and vomiting associated with other (mainly respiratory) infection, one was sent to hospital at the outset. Twenty of 21 managed at home and receiving dilute saline solution had recovered within four days while one patient was admitted because of failure of rehydration with oral fluids.

These results lend some support to the view that there is little place, if any, for the routine oral administration of antibiotics for diarrhoea and vomiting commonly encountered in general practice.

Introduction

Patients often see their general practitioner because of diarrhoea and vomiting. These presenting symptoms may theoretically be associated with a wide range of different causes, but in general practice in the United Kingdom they usually betoken a condition which runs a self-limiting, relatively mild course.

Although in the past investigations usually failed to uncover any infective agent, associated features often strongly suggest an infectious aetiology. Such gastroenteritis is well known to general practitioners, who may encounter about 51·7 episodes per 1,000 population in one year (Pinsent, 1974).

Antibiotics are still widely prescribed in the management of these conditions in general practice, despite evidence that their use is unnecessary and may even be harmful (Ironside *et al.*, 1970). In a well executed study Everett (1973) showed that in his hands the effect of treatment with kaolin alone was marginally better than that achieved with a neomycin-kaolin mixture. This study was carried out under conditions which may not be common in general practice, and there is a need to supplement such work by an account of what might happen to patients with ' clinical gastroenteritis ' if they are denied antibiotics through a deliberate policy.

Previous experience in our practice when antibiotic therapy was often prescribed indicated that less than one in 50 episodes required treatment in hospital, and that the condition would usually settle within three or four days in over 80 per cent of episodes.

Aim

Would the implementation of a ' no-antibiotic ' policy result in a higher frequency of admission or a longer period of illness for our patients?

Method

Observations were made on patients suffering from diarrhoea and vomiting, seen in each of two practices in a neighbouring area on the outskirts of Glasgow.

Over a period of about six months, all patients seen consecutively were included if they presented with a complaint of loose, frequent, watery stools with or without vomiting. Presenting features, patient identification, management, outcome and certain other data were recorded on a specially printed form. It was agreed that antibiotics would not be prescribed, but symptomatic antidiarrhoeal therapy (e.g. kaolin, or diphenoxylate) would be given. Other conditions

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in which it was thought that diarrhoea was merely an associated symptom (albeit the presenting one) were treated on their merits with or without an antibiotic.

Relatives were routinely advised not to give solid or liquid food of any kind, including milk, milk substitutes, commercial glucose solutions or home-made drinks containing sugar or inappropriate amounts of salt. Instead, treatment was routinely based on a dilute salt solution made up in one of two ways, by dissolving:

(a) One tablet of a proprietory preparation ('Electrosol') in 120 ml tap water (giving a solution of the following approximate composition—Na 48 meq/1; K 17 meq/1; Cl 44 meq/1; $HCO_3$21 meq/1);

(b) One teaspoonful of table salt in two pints of warmed tap water, flavoured by a few drops of the juice of a fresh lemon.

Infants were given 2½–3 fl oz per lb of body weight in frequent small amounts for 24 hours; others were encouraged to take frequent drinks. A careful watch was kept for clinical evidence of dehydration.

As in normal general practice, electrolytes were checked only when there was doubt about the adequacy of hydration, and stools were sent for bacteriological analysis if blood was present or if symptoms were not improving. Admission to hospital was dictated by the clinical state and by home circumstances.

Results

During the survey, details were recorded about 108 episodes of diarrhoea and vomiting occurring in 108 patients (56 male and 52 female) with the age and sex distribution shown in table 1. The social class distribution (table 2) reflects that of the population from which the sample is drawn with a pre-dominance of middle class families living in adequate housing, though nine patients had their only lavatory outside the house.

TABLE 1
AGE DISTRIBUTION OF 108 PATIENTS

Age	*Male*	*Female*	*Total*
Under 12 weeks	2	2	4
3–6 months	11	9	20
6 months–2 years	12	11	23
2–5 years	12	12	24
5–15 years	7	5	12
Adult	12	13	25
	56	52	108

TABLE 2
DISTRIBUTION BY OCCUPATION OF HEAD OF HOUSEHOLD

Social status	*Number*
Professional	36
Intermediate	66
Family worker	3
Trainee	3
	108

While the presenting features in every case were diarrhoea and/or vomiting, as is inevitable in primary care, there were several associated conditions, the commonest of which were respiratory infection and otitis media. The severity of the patients' state when first seen was assessed by the presence or absence of clinical evidence of dehydration and frequency of diarrhoea/vomiting—more than eight bouts of either in the preceding 24 hours being classified as ' major

upset'. The clinical picture on initial assessment is shown in table 3. Because management of 26 episodes of these symptoms associated with other conditions occasionally required antibiotic therapy, and because the diarrhoea and vomiting in these circumstances could be regarded as symptomatic of the underlying condition as much as gastroenteritis, they are considered separately.

TABLE 3
CLINICAL FINDINGS ON INITIAL ASSESSMENT

Clinical syndrome	*Degree of upset*			*Totals*
	Moderately severe	*Moderate*	*Mild*	
Diarrhoea and vomiting only	9	28	45	82
Diarrhoea and vomiting and respiratory infection	1	9	7	17
Diarrhoea and vomiting and otitis media	0	4	3	7
Diarrhoea and vomiting and other medical conditions	0	1	1	2
	10	42	56	108

Uncomplicated diarrhoea and vomiting

The remaining 82 ' uncomplicated ' episodes were all managed by the regimen outlined above. None of the patients in this group required admission to hospital. After 24 hours, one patient had not improved and the management was changed to include a proprietary neomycin-kaolin preparation partly on account of anxious parents. Of the remaining 81 patients, 67 were symptom free and well 72 hours later. Six cases had failed to improve at 72 hours, only one of these had been classified as mildly affected. All had settled within a week. One patient who had blood and mucus in the stool proved to have infection with *Salmonella typhimurium*. Eight further patients failed to attend at 72 hours, but their parents subsequently reported that the condition had settled satisfactorily within two to three days of initial assessment.

Diarrhoea and vomiting

In most of the 26 patients in this group the symptoms were associated with a respiratory illness (16 cases), three of which also had influenza-like features. A further seven were associated with otitis media. The management of this group was influenced by these associated conditions. Thus, one patient (with an influenza) was admitted to hospital because of a convulsion: he was discharged well one week later, no pathogens having been isolated from his stool. Two patients with associated respiratory symptoms received ampicillin. One patient with associated otitis media received ampicillin, and one patient with urinary tract infection received co-trimoxizale.

Of the 21 patients in this group treated at home on a no-antibiotic regimen, 19 were symptom free and well at 72 hours. Of the two whose progress was unsatsifactory, one with otitis media, was admitted to hospital: he was discharged well a week later. The other (with respiratory symptoms) was improved at four days.

Discussion

The implementation of a no-antibiotic policy for the routine management of straightforward diarrhoea and vomiting in general practice was not associated with any admissions to hospital, and the majority of patients (82·7 per cent) were well within three days. The same policy judiciously applied to the group in which diarrhoea and vomiting were associated with evidence of other infection likewise did not appear to hinder recovery (19 of 21 were well within three days) or to place unduly heavy burdens on the hospital services (two admissions from this group).

Arguments for pursuing a no-antibiotic policy have been set out by Knox (1972): they include the risk of enhancing the development of resistance to many commonly used antibiotics by transfer factors, and the possibility of *prolonging* the excretion of certain pathogenic bacilli in the small proportion of cases where bacterial infection is responsible for the bowel

condition. Such arguments are strengthened by recent work (Bishop *et al.*, 1973; Flewett *et al.*, 1973) which suggests that a much more common cause of diarrhoea is infection with one of the ' rotavirus ' or ' duovirus' group (Davidson *et al.*, 1975).

The main management logically consists of ensuring an adequate intake of fluid. Experience with the commercially available tablets for making up a solution of optimum electrolyte composition did not suggest that they had any special advantage for the patient over ordinary salt. Although the doctor might feel a little more secure about the adequacy of his instructions, there is a theoretical risk that the patient may take or be given the tablets undiluted, believing them to be " the cure ".

The routine bacteriological investigation of diarrhoea remains an ideal which is unikely to be attained by many general practitioners, and was not attempted in this study. However, selective investigation, for example when the diarrhoea is associated with blood, or fails to clear, or is occurring in the household of a food-handler, is worthwhile: one case of salmonella infection was thus uncovered. The no-antibiotic policy appeared to be as effective in management of this case as in the rest of the group.

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