Professor of Greek tells me that he truly believes the classics have made him what he is. This is a very grave statement, if well founded. Indeed, I have heard the same argument from a great many Latin and Greek scholars. They all claim, with some heat, that Latin and Greek have practically made them what they are. This damaging charge against the classics should not be too readily accepted. In my opinion some of these men would have been what they are, no matter what they were."—STEPHEN LEACOCK.

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Appendix

SAMPLE TEST

Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
1. capital	11. curfew	21. colossus	31. capillary	41. atropine	51. chiasmus
2. centipede	12. gully	22. grapple	32. genre	42. diacritical	52. dipnoad
3. diary	13. ignorance	23. humiliate	33. heterodox	43. heterodyne	53. glaucous
4. hibernate	14. laborious	24. invertebrate	34. jurisdiction	44. hubris	54. ichthyornis
5. howl	15. merriment	25. lunar	35. lapidary	45. jalousie	55. laniary
6. ledge	16. obtainable	26. mosaic	36. matrix	46. lumen	56. primage
7. medium	17. ravenous	27. penance	37. onus	47. metempsychosis	57. reremouse
8. pioneer	18. rivet	28. sieve	38. parvenu	48. pointillist	58. scantling
9. wobble	19. temporary	29. tenacious	39. prehensile	49. provenance	59. thanatology
10. yap	20. valueless	30. venomous	40. sirocco	50. semantic	60. ulema

Instructions.—No time limit is set. The student is requested to tick any word to which he considers he cannot give a definite meaning. When 10 such words have been ticked the student stops and writes down the meaning of the last five words recognized. The accuracy of the meanings given are checked and the results adjusted. Each student performs three such tests; the mean result is interpreted in accordance with the scale indicated in the text.

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A New Look at Infectious Diseases

Gastroenteritis of Infancy

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Gastroenteritis of infancy is a common infectious disease affecting children under the age of 2 years. The disease is more common in the industrial North than in the South of England, but on average one baby in every ten will be seen each year by a general practitioner on account of gastroenteritis. Of the cases seen at home nine out of ten are successfully managed there and only one requires admission to hospital.[1]

Causes

Fully breast-fed babies are almost completely immune, and children above the age of 2 years are rarely affected in an outbreak in a family or institution. In a minority of cases specific agglutinable *Escherichia coli* are isolated from the faeces; about a dozen pathogenic types are recognized, including 026, 055, 086, 0111, 0114, 0119, 0125, and 0126. These organisms act as pathogens only in this single disease and are otherwise indistinguishable from "ordinary" coliforms. The main cause of the disease may be the temporary clinical upset which accompanies the acquisition of new strains of coliform organisms in the gut of the young child. A similar change in coliform pattern is one of the causes of "travellers' diarrhoea,"[2] so it may be that the baby's trip to the local nursery is the bacteriological equivalent of the adult's trip to Egypt.

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Clinical Diagnosis and Assessment

The initial diagnosis and assessment of gastroenteritis is clinical and includes the answers to four questions. Firstly, are the symptoms and signs found compatible with simple gastroenteritis or does any feature suggest more serious intra-abdominal disease? Secondly, are there any signs of infection in other systems such as ears, throat, chest, or nervous system to which the diarrhoea and vomiting might be secondary? Thirdly, is there any degree of dehydration present? Fourthly, is the mother capable of carrying out the necessary management of fluids or is further help necessary? These questions will now be considered in rather more detail.

CLINICAL FEATURES

The cardinal features of gastroenteritis are vomiting and refusal of feeds, followed by diarrhoea of varying severity. The vomit consists of altered milk and is not usually heavily green and bile-stained, the latter suggesting a high intestinal obstruction. Projectile vomiting suggests congenital pyloric stenosis, a condition of the first few months of life. The diarrhoea may be of any colour or consistency and in the worst cases will simply soak away into the nappy leaving little or no faecal material. But normally it does not contain blood, which is more suggestive of an acute intussusception.

Some fever is quite common, but physical examination is otherwise negative, the abdomen being normal and soft if somewhat gurgling. Other signs such as distension, visible peristalsis, or local masses suggest more serious disease. If any unusual symptoms or signs suggest to the general practitioner that more serious disease may be present, it would be advisable to request a further opinion, either in the home or by admission to hospital.

SYSTEMIC INFECTIONS

Diarrhoea and vomiting may be secondary to a systemic infection in the baby, so that full examination is necessary to exclude respiratory tract infection, otitis media, urinary infection, or even rarely meningitis. The discovery of the signs of one of these conditions would lead to modification of the treatment or occasionally admission to hospital.

DEHYDRATION

Dehydration is the most important, indeed practically the only important, complication of gastroenteritis and is due to the continued loss of water and salts from the body. The earlier signs are indefinite, comprising undue irritability, crying, and sleeplessness, with pallor of the skin sometimes contrasting with bright redness of the lips, the latter signs resulting from haemoconcentration.

With further fluid loss, the classical signs of established dehydration appear. The eyes become sunken and black-ringed, sometimes with a reddened and glazed appearance of the conjunctivae. The mouth and tongue become dry, being sticky at first and even leathery at a later stage. The skull becomes unduly prominent through the skin and the fontanelle, if patent, become sunken. The skin loses elasticity and if pinched up over the abdominal wall, does not spring back instantly, but subsides slowly or even remains standing as a ridge. The diagnosis at this stage is simple, but difficulty may arise with obese babies where the fat (which does not contain much water) obscures the facial signs of dehydration.[3] If fluid loss continues after dehydration is established then peripheral circulatory failure (shock) supervenes, with mottled cyanosed skin, icy cold hands and feet, and absent peripheral pulses. This is a most grave condition and half the affected children die.

Biochemical investigations are not easily arranged at home on babies but the blood urea can be estimated by the Azostix test on a fingerprick specimen. This is a sensitive index of dehydration and rises above 40 mg/100 ml even in mild dehydration.

The earliest stage of dehydration described above is manageable at home if the general pratitioner is prepared to devote time to fluid management, and the mother is capable, but the more serious grades are better treated in hospital.

ROLE OF THE MOTHER

Since the management of even the uncomplicated case will require fluid administration considerably different from the normal milk feeding, it is important that the mother is capable of carrying this out and is fully in agreement with the necessity of treatment. If the mother's capability is in doubt, frequent visits from the practice nurse or attached health visitor would be of considerable help in supervising the management of the case. If the mother is entirely incapable or unwilling—and this is most often true in very poor homes—then the admission of the case to hospital requires consideration, and most isolation units would be prepared to admit cases on the general practitioner's recommendation that the home circumstances are completely inadequate.

Management

The essential part of management of gastroenteritis is the prescription and supervision of a correct fluid intake during the days of acute symptoms. Unfortunately there is no drug or bottle of medicine given three or four times a day which represents adequate treatment.

ANTIDIARRHOEAL PREPARATIONS

A wide variety of preparations are available and are heavily advertised for the treatment of diarrhoea. These range from the humble kaolin to the sophisticated derivatives of atropine. Nevertheless, there is no evidence that they do the slightest good in gastroenteritis, and their use adds nothing to the management of the case.

ANTIBIOTICS

Most of the agglutinable *E. coli* isolated from cases of gastroenteritis are sensitive to a wide range of antibiotics and it seems self-evident that the use of antibiotics should benefit the patients. Sadly, the evidence which has accumulated over the last twenty years points to the opposite conclusion—namely, that it is very difficult to find any acceptable evidence that antibiotics are in any way beneficial in gastroenteritis. Nevertheless, there is still a great deal of commercial advertising on the subject and some medical authorities still advocate antibiotic treatment. The usual claims made are that antibiotics eliminate pathogenic organisms from the gut, prevent the spread of the disease, and improve the clinical condition of the patient.[4] There is abundant evidence that the first claim is quite untrue, and even that in the case of salmonella infections the use of antibiotics delays natural clearance of the organism. There is no clear evidence that the second claim is true and I have had recent experience of the complete failure of the blanket use of antibiotics to halt the spread of an epidemic of cross infection in a gastroenteritis unit.[5] The third claim is the most difficult to assess; certainly there is very little controlled trial evidence of any benefit, and it is the widely held view of workers in communicable diseases that antibiotics do little or nothing to benefit the baby suffering from gastroenteritis.

In summary, therefore, there would appear to be little value in the treatment of this disease with antibiotics, however tempting the proposition might seem. It is worth quoting the recently published "conversion" of a professor of general practice[6] on this subject. "Is an antibiotic necessary? Is it even effective? Five years ago I should have unhesitatingly answered 'yes' firmly to both questions, but today I am much less certain. . . . Thereafter I treated most patients symptomatically, some might even say with a placebo, namely kaolin mixture, and my patients did not appear to be any worse. In retrospect I suspect that in the past I was more often than not treating myself, rather than my patient."

On the reverse side of the coin, the indiscriminate use of antibiotics (recently described as a form of environmental pollution) does lead to an increase in drug resistance among coliform organisms, which may then be progressively passed on to more dangerous pathogens by the mechanism of resistance transfer.

The recent appearance of a highly resistant typhoid organism in America may be the unhappy end result of this process. On the other hand, when examination has shown some coexisting infection, such as otitis media or bronchitis, this may require antibiotic treatment in its own right.

FLUID MANAGEMENT

Fluid management is by far the most important aspect of treatment. The principle of treatment is the withdrawal of all milk and solid feeds and their replacement with a suitable salt-containing clear fluid over the period of acute symptoms (normally about 48 hours). When this treatment is instituted it can be expected with some confidence that the vomiting will stop. In fact, if vomiting persists in the face of a suitable fluid regimen, then there is a need to reconsider the diagnosis.

The composition of a suitable fluid regimen is obtained from the answers to three questions: what types of fluid are suitable?; how much fluid is required?; and how is the fluid to be given?

These questions are now considered in detail.

Types of Fluid

In very mild cases it may be enough to feed the baby with more dilute milk feeds, in smaller amounts, at more frequent intervals until the symptoms settle. In the more severe cases, however, a salt-containing clear fluid is necessary. The main fluid loss from the baby is the diarrhoeal fluid and the average composition of this is shown in the table. Hence a rational replacement fluid might be of a similar composition. Half-strength Darrow's solution is suitable (see table), but this is not easily available in general practice. A home-made solution of half-strength normal saline, lightly flavoured with orange, is quite suitable, since sodium is the most important component of the replacement fluid. However, to obtain a correct concentration, it would be necessary for a pharmacist to make up powders, each containing 2·25 g sodium chloride to be dissolved and flavoured in a pint (500 ml) of water before use. The most convenient preparation is Electrosol solution tablets, which are available on prescription. One tablet dissolved in 125 ml (4 fl oz) of water makes the required solution (see table).

Comparison of Diarrhoeal Fluid and Replacement Solutions (in mEq/l.)

Fluid	Sodium	Potassium	Chloride	Bicarbonate
Diarrhoeal fluid	50-100	20-40	40-80	approx. 20
Half-strength Darrow's Solution	60	18	52	25 (as lactate)
Electrosol Solution	46	17	44	19
Half-strength normal saline ..	75	—	75	—

It is very important to ensure that the mother is capable of making up the solution accurately using a correct measure, as electrolyte solutions of the wrong concentration would be unsuitable—and even dangerous. These solutions are satisfactory replacement fluids for up to two or three days, but should not be prescribed beyond this period without the estimation of the serum electrolytes.

Two common mistakes in management are particularly to be avoided. The first, made by the mother, is to attempt to feed the baby with thickened feeds when ordinary milk feeds are vomited. This attempt invariably ends in increased vomiting. The second, and more serious mistake (sometimes encouraged by the doctor), is the unrestricted use of glucose solutions as a replacement fluid. Glucose is very highly soluble and the mother will frequently make up a hypertonic solution, which when fed to the baby will draw more water into the stomach, will encourage further vomiting, and may seriously aggravate the course of the disease. The same faults are shared by commercial effervescent preparations of liquid glucose. Hence it is better to avoid glucose entirely in the composition of replacement fluids.[7]

Quantity of Fluid

The average daily fluid requirement of a baby up to the age of 5-6 months is 150 ml per kg body weight per day (2½ fl oz per lb per day). In the case showing the earliest signs of dehydration an extra allowance of 25 ml per kg body weight is made for the first day or two. By this formula a 5-kg (11-lb) baby requires 750 ml (27 fl oz) in a day or 875 ml per day if there is incipient dehydration.

Route of Administration

The fluid is given by mouth in repeated small amounts spread over the day. Fluid will usually be taken quite eagerly from a baby bottle, but a reluctant baby may have to be fed by spoon. The feed should not be more than 100 ml (3 fl oz), as amounts larger than this may provoke vomiting. The feeds are spaced at hourly or at the most two-hourly intervals throughout the day. To return to the example of the 5 kg (11 lb) baby requiring 750 ml (27 fl oz), a suitable day's regimen might be 50 ml (1½ fl oz) every hour over a 15-hour period, or if the symptoms were less severe 100 ml (3 fl oz) every two hours over the same period. After about 48 hours a return can usually be made to dilute milk feeds—the concentration, the amount, and the interval between feeds being increased as the baby improves, so that normal feeding should be possible within a week.

In the management of gastroenteritis at home, the greatest success and satisfaction undoubtedly stem from the medical and nursing supervision of the fluid regimen, and it will be found that antibiotics and other "medicines" play little or no part in the treatment.

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