

Antidiarrhoeal drugs for acute diarrhoea in children

None work, and many may be dangerous

The right treatment of acute diarrhoea in childhood, especially in developing countries, remains the exception rather than the rule. Many ineffective and potentially toxic drugs are widely prescribed and in many countries easily obtained without prescription.¹ The misuse of antidiarrhoeal drugs provides a rich source of income for more than 160 drug companies and thousands of health professionals, pharmacists, and quacks.

In Pakistan, for example, 25 pharmaceutical companies, including some of the largest multinationals, market antidiarrhoeal drugs worth more than \$10m but only four companies make oral rehydration solution. In Peshawar more than 90% of general practitioners (and 80% of paediatricians) use antibiotics and antidiarrhoeal drugs in addition to oral rehydration solution to treat diarrhoea, largely because they profit from drug sales directly and do not levy a charge for the consultation itself.² One study in Indonesian health centres found that nine out of 10 children with diarrhoea were given antimicrobial drugs as well as rehydration sachets; unnecessary drugs accounted for almost half the cost of treatment.³

Despite clear statements by the World Health Organisation that antimicrobial drugs have no place in the routine treatment of acute diarrhoea one out of every two antidiarrhoeal preparations marketed in 1988-9 contained an antimicrobial drug.⁴ And in Britain a study in Newcastle showed that 70% of community pharmacists, whom many parents consult about children's ailments, recommended inappropriate treatment for childhood diarrhoea, which included antidiarrhoeal drugs.⁵

Many antidiarrhoeal drugs have serious and occasionally fatal side effects. The deaths of six babies from intestinal obstruction in Pakistan alerted paediatricians to the misuse of loperamide drops and syrups and led to the withdrawal of these formulations by drug companies after deregistration by the Ministry of Health.⁶ Other potentially fatal adverse reactions include neurological disorders such as coma (with diphenoxylate) and subacute myelo-optic neuropathy (with hydroxyquinolones), malabsorption (with aminoglycosides and mixtures of kaolin and pectin), and haemolysis and hypersensitivity reactions (with the sulphonamides). Widespread misuse of antibiotics has led to increased resistance, making the treatment of infections with shigella difficult and leading to epidemics due to resistant strains.^{7,8} And for poor families, for whom acute diarrhoea is a common problem, there is the unnecessary burden of cost. In Indonesia the

economic burden of diarrhoea averaged \$2.27 for each child under 5 in 1987.³

Worst of all, inappropriate use of drugs often delays the right treatment—for example, prompt rehydration, adequate feeding during and after diarrhoea, and antibiotics for dysentery and cholera. Some four million children under 5 continue to die each year from acute diarrhoea, and many more are precipitated into malnutrition, increasing their vulnerability to infection.

Oral rehydration solution, the cornerstone of good treatment and vigorously promoted by many governments and international agencies, is used less commonly than planners believe. For example, in two urban primary health care projects in the Philippines oral rehydration solution was rarely used despite being actively promoted.⁹ In half of the non-severe cases of diarrhoea drugs were used without a doctor being consulted and locals considered oral rehydration solution to be a laxative that "cleans the intestines."

An important reason why antidiarrhoeal drugs are so commonly used is that glucose based oral rehydration solution does not decrease the number of stools and parents do not consider that the diarrhoea is getting better. The new food based "super oral rehydration solutions," which substantially reduce the number of stools,¹⁰ are therefore an important advance and should reduce the inappropriate use of drugs.

Consider the users

What else can be done? The recommendations from a recent review of drug use and misuse in developing countries are clear.¹¹ More objective information on the rational use of drugs is needed in all countries, including the developed ones, and consumers need to have direct access to it. Stricter controls should exist on advertising. Before designing and implementing policies policy makers should consider cultural drug practices and the views of users. Too often pleas for the rational use of drugs in developing countries go unheeded because the focus is on the health provider.¹² Studies of local drug use are important before campaigns are mounted, given the high rates of self medication with drugs that should be used only on prescription.

Finally, governments have a responsibility to develop essential drug lists that comprise only drugs that are safe, effective, affordable, and needed. They should be encouraged to regulate tightly the pharmaceutical market place. This will

continue to be an uncomfortable and probably unheeded message for those donors and agencies who exhort the governments of developing countries to make their economies more competitive and to import market principles into their health sectors.

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Voice after laryngectomy

"Speech buttons" could be more widely used

Most patients are struck dumb, at least temporarily, when told that they have cancer, but for those with carcinoma of the larynx this may prove to be more than a mere figure of speech. In many the voice has already deteriorated, and over three quarters of those who have a laryngectomy fail to develop adequate oesophageal speech.^{1,2} Inability to communicate often makes these patients totally unemployable.³ This, together with the presence of a permanent tracheostome and their altered body image, may contribute to a deep sense of isolation and depression. Though some make no complaint, all find the experience intensely disturbing. For many the disability is long lasting as overall five year survival is about 80%.⁴

Fortunately, many patients with early disease can be cured with radiotherapy alone and their voice quality restored to its premorbid state.^{5,7} By contrast, some fail to respond favourably to treatment or develop a recurrence after radiotherapy. Others present with advanced disease, and for these unlucky patients total laryngectomy provides the only hope of long term survival.^{8,9} Perhaps the greatest management problem is the choice of treatment for those with locally advanced (T₃N₀M₀) disease.¹⁰ In this group of patients survival rates for primary radiotherapy have been almost comparable but are inferior to those for surgery.¹¹⁻¹³ Perhaps unsurprisingly, up to one in five patients choose radiotherapy, even though it is therapeutically inferior, to preserve their voice.¹⁴

Voice conservation can be achieved with surgical treatment for a small minority. Cordectomy and vertical or horizontal partial laryngectomy may be as effective as radiotherapy in controlling disease that is still at an early stage and well localised. This form of surgery does not always eliminate the need for tracheostomy, and the quality of phonation afterwards is rarely good, except after supraglottic laryngectomy.¹⁵ Furthermore, all these procedures are fraught with complications, not the least of which are aspiration pneumonia and recurrence due to inadequate resection. Over the years total laryngectomy has therefore proved to be the single most reliable and oncologically sound procedure. Many surgeons regard this as the only practical alternative to radiotherapy.

The traditional rehabilitative approach after surgery is for speech therapists to work intensively over several weeks with a patient who has just undergone laryngectomy. They teach them how to ingest air into the oesophagus, regurgitate it in a controlled manner to produce sound, and then modulate and

articulate it into comprehensible speech. As only about 80 ml of air can be held in the oesophagus speech has to be delivered in a series of staccato phrases punctuated by gulps of air. A few patients become remarkably fluent—some even sing—but most achieve little more than a whisper. Those who have remained silent have been equipped with vibrating devices, which they have held in contact with the neck and activated while mouthing words.¹⁶ Their utterances, often unintelligible, are frequently likened to those of extraterrestrial, science fiction creatures, a source of constant amusement to young children but a continuing source of misery for the victim.

Several factors determine whether or not patients acquire a satisfactory oesophageal voice. Detailed analyses of the functional anatomy of the reconstructed pharynx have concentrated mainly on where the sound is produced: the pharyngo-oesophageal segment. Stricture, spasm, and hypotonicity of this segment are all associated with poor speech and are readily shown by videofluoroscopy. In some patients surgery may overcome these problems. This takes the form of flap reconstructions for strictures or myotomy to decrease spasm. Hypotonicity may occasionally be rectified merely by digital pressure on the front of the neck during phonation.¹⁷ Attributing poor oesophageal speech to a patient's psychological, sociological, or intellectual limitations is no longer acceptable.

All this takes time, but a few readily identifiable patients (for example, those who have undergone salvage for advanced disease) have relatively little of this valuable commodity left. Worse still, extensive resections of the pharynx, or oesophagus in addition to the larynx, reconstructed with stomach, colon, or myocutaneous flaps rarely allow the patient to speak well no matter how much effort is put into speech therapy.

Fortunately the surgical management of such patients and those who are dissatisfied with the quality of their oesophageal voice has changed radically in the past decade. Although primary and secondary tracheo-oesophageal puncture and the formation of fistulas through which patients can shunt air into their pharynx are far from new,^{18,19} the techniques for preventing unwanted salivary leaks and aspiration certainly are. A wide variety of silicone, flanged, valved stents are now available for insertion into the fistula. The patient merely blocks his or her tracheostome with a thumb and injects into the pharynx just as much air as is necessary for conversation. Even better, recently developed stomal valves automatically