Multidrug resistant typhoid fever in children

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Multidrug resistant infections are on the increase and include common community-acquired infections such as typhoid, malaria and tuberculosis. Multidrug resistant typhoid fever assumed epidemic proportions in the country some years ago, initially catching physicians unawares. As the epidemic worsened, many new antibiotics were marketed, and physicians chose drugs on the basis of whim more than scientific validity or consensus. Most patients recovered but over a prolonged time.

It was clear that the epidemiology of typhoid fever had changed. Many lessons have been learnt through this epidemic and need due consideration.

Origin of the MDR typhoid epidemic

Complacence about the typhoid vaccine and its non-availability, coupled with poor sanitation, non-potable water supply and contaminated food – all led to a higher prevalence of typhoid fever in children. Large-scale, irrational use of anti-typhoid antibiotics such as chloramphenicol, cotrimoxazole and furazolidone for common diarrhoeal illnesses prepared fertile ground for the development of multidrug resistance. Physicians treated individual patients "without taking any risks", with scant regard for scientific rationality, and even at the cost of the community. This contributed to the present MDR typhoid epidemic.

Wide clinical spectrum of the disease

Typhoid fever is a disseminated systemic disease, but in the majority of patients, its manifestations used to be localised in the intestines and the reticuloendothelial system. Complications were rare and confined to intestinal haemorrhage or perforation.

In its epidemic form, however, the disease manifested with involvement of all systems. Liver affection was evident in most patients, as suggested by raised enzymes and at times even bilirubin. Cholecystitis was a common feature easily made out on abdominal sonogram. In fact, such findings offered clues to the diagnosis of typhoid fever. CNS manifestations included encephalopathy, myelopathy and cerebellar signs. Nephritis, osteomyelitis and many other lesions were occasionally reported.

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Need for obtaining proof of MDR infection

Most physicians in India are used to diagnosing infection without bacteriological proof. This practice evolved from a lack of bacteriological facilities compounded by a lack of initiative to pursue proof of infection. Physicians prefer to spend money on different drugs rather than obtain proof of diagnosis.

At the same time, patients are trained to expect a cure without diagnosis. The recent typhoid epidemic has taught many physicians to consider bacteriological proof to confirm drug resistance in support of poor response to treatment.

Choice of antibiotic

In the initial period of the epidemic, resistance was evident to most of the first line of antibiotics. Newer antibiotics such as quinolones and cephalosporins had retained sensitivity. Thus, ciprofloxacin was considered the drug of choice, its merits being its oral form, convenient dosage schedule and a reasonable safety profile. A number of clinical studies disproved earlier fears of damage to growing cartilage. Third generation cephalosporins were inferior alternatives because they were in parenteral form.

However, despite using the newer antibiotics, patients did not improve over several days. In the earlier days of chloramphenicol sensitivity, physicians were used to obtaining defervescence of fever within three to four days of starting the antibiotic. This did not happen with the newer drugs, and the way was paved for drug combinations, frequent changes of antibiotics and irrationality in treatment protocols, with no single, drug or combination proven better than another.

Drug resistance started surfacing with newer drugs as well. It was realised much later that despite retaining sensitivity, MIC levels of the drug had gone up considerably, necessitating higher doses for adequate concentrations. Conventional doses led to a poor response even when the strain was drug sensitive.

After this fact came to light, the recommended dose of ciprofloxacin became 30 mg/kg/day and not 20 mg. A single antibiotic in the correct dose should suffice to treat typhoid successfully and there is no reason to use drug combinations.

Duration of treatment

Conventionally, therapy is continued at least for a week after control of fever. Many physicians change the drug after a few days from parenteral third generation cephalosporin to oral second generation, for the sake of convenience. This does not make sense. A change of molecule, even from the same group of antibiotics, does not guarantee a similar response.

Expected outcome

Due to this changing epidemiology, the disease seems to run a much longer course than expected, even when a sensitive drug is used in adequate doses. This is partly due to upgrading of MIC levels of the drug, necessitating a higher dose.

It is ironical that many patients on the newer antibiotics take more than 10-14 days to become afebrile, unlike earlier when chloramphenicol controlled fever within three to four days. It is a warning for the future.

Changing drug sensitivity in recent times

With the constant use of newer antibiotics, the first line of drugs has not been used for some years now. This

has resulted in reversing of sensitivity to the conventional drugs and the slow appearance of resistance to newer drugs. It is time to reconsider the first line of drugs, keeping the newer drugs in reserve.

Prevention of MDR typhoid

The rational use of antibiotics and propagating vaccination of susceptible people seem to be the key factors in preventing MDR typhoid. With the advent of MDR typhoid fever in the community, the market is flooded with different vaccines. Newer vaccines such as oral TY 21A or Vi are as efficacious as the conventional phenol killed TA vaccine.

The MDR typhoid epidemic has taught us a lesson. Physicians have been largely responsible for this epidemic. Vaccine coverage of the susceptible population and rational choice of drugs to treat bacteriologically-proven infections will go a long way in preventing such epidemics in the future.

Informed consent before surgery for intersex disorders

Since surgery for children with intersex disorders is done during infancy, informed consent must be taken from the child's parents. This article suggests that parents are not given sufficient information to make this important decision. They are given little information on the condition. Though there are many theories about the socialisation of children into gender groups, they are offered only one theory in which surgery is promoted soon after birth. They have no information on the psychosocial outcomes of such surgery. Finally, they are not told of option not to treat. The author calls for doctors to provide parents better information, and also suggests that surgical options should be presented when the child can be part of the decision-making process.

Purves BV: Parental consent and the surgtical management of intersexed newborns. *Monash Bioethics Review* 2000; 19 (1): 23-42

Medical ethics in paediatric practice: a GP's viewpoint

Medical ethics is a code of behaviour accepted voluntarily by the medical profession. Unfortunately, unlike other countries where the respective national medical associations lay down various codes of conduct and enforce them on their members, in our country, medical councils, both national and state, are not very vigilant and therefore cannot play the role expected of them. In such a scenario, the responsibility to practice ethically rests on the individual doctor.

With this background, let us look at paediatric practice, especially private paediatric practice in cities. Since the patients themselves are minors, not capable of taking their own decisions, practicing paediatricians have even more responsibility to behave ethically. Parents of sick children are also in a state of anxiety. Since they are emotionally attached to their children, they are not really capable of proper reasoning and judgement. According to the Code of Ethics, the doctor is expected to be very clear in communicating to the parents, relevant information on their child's ailment, and the prognosis for the condition. This could require communicating in regional languages as and when needed. The information should be given in such a way that it is as complete as required without putting any undue fear in the minds of the parents. This would mean that a good amount of time is spent with the patient and the parents. Unfortuantely, this is not seen very often in busy city practices.

Another aspect of private practice is the fact that records handed over to the patient as prescriptions rarely contain proper notes. The majority of such medical records contain only the names of the prescribed drugs. Bodies such as the Indian Academy of Paediatrics should set standards for record keeping.

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This brings us to the common problem of overuse and misuse of drugs. The majority of problems seen in paediatric practice are routine cases -- cough and cold with fever and diarrhoeas. Most of the time, such conditions are viral in origin. But antibiotics are prescribed freely, in order to produce 'fast results'.

Childhood immunisation with certain prescribed essential vaccines is a well accepted programme in our country. Today, however, some private paediatricians are aggressively promoting some costly vaccines which have been classified as "optional".

The doctor is expected to advise the patient to seek a specialist's consultation whenever necessary. Currently there is evidence of an increase in the incidence of behaviour problems in children, due in part to stress. It is believed that one out five children needs psychiatric help. However, the antipathy towards this speciality is quite alarming. It is no wonder that the closure of the child guidance clinic in a reputed hospital for children has met with little protest.

Physicians have certain duties to their profession. They should contribute time, energy and means to the promotion of medical associations with which they are affiliated. They should also expose unethical conduct. However, not many physicians fulfil such duties, using their busy schedules as an excuse.

Doctor are not supposed to take patients away from their colleagues. However, children referred to a paediatrician return to the family physician only when they attain adulthood.

The treatment of disabled children or terminally ill children are other situations in which paediatricians must act with a lot of ethics and wisdom.

These are some of the common ethical problems in paediatric practice. With honourable exceptions, many of us need to improve our ethical professional behaviour to make the paediatric physician an ideal one.

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