Paediatric Emergencies in General Practice

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Summary

Uzodike, V. O. (1976). *Nigerian Journal of Paediatrics*, **3**(2), 39. **Paediatric Emergencies in General Practice**. An analysis of 1856 paediatric emergencies seen at a general practitioner's clinic in Enugu, Nigeria, during a one year period is presented. Accidental injuries, gastroenteritis and febrile convulsions were the commonest problems and were responsible for 25 per cent, 22.5 per cent and 20 per cent of all emergencies, respectively. Other common emergencies were acute respiratory infections which were diagnosed in 15 per cent of patients and poisoning which occurred in 10 per cent of cases. Mortality was highest among cases of neonatal tetanus followed by cases of febrile convulsions and gastroenteritis.

About 95 per cent of the emergencies were considered preventable. Most of the emergencies occurred in children under the age of 5 years, who also constitute a majority of the sick population in Nigeria. It is suggested that the health of the nation, including the prevention and care of emergencies, can best be improved by paying more attention to the health care of this age group.

BECAUSE of their vulnerability, children constitute about half of the patients seen in any general hospital in Nigeria, as well as in most other developing countries. Having tried self-medication without success, and having further complicated the clinical picture with injections from quacks, the anxious and confused mother arrives with her child at either the general outpatients clinic of a public hospital or at a general practitioner's clinic, often in a state of emergency. The general practitioner is thus expected to be an expert in managing emergencies; he is also the third and more often than not, the last resort since most cases are seen by him; only a few cases go to consultant paediatricians who are, of course, very few in Nigeria as well as in other developing countries in Africa. It thus becomes necessary to provide information on the pattern of common paediatric emergencies in general practice, with the hope that such information will equip the consultant paediatrician with knowledge that would be valuable to him in the teaching of medical students, resident doctors, student nurses and field workers.

It was with the above objective in view that an analysis of paediatric emergencies personally treated by the author in St Vincent's Hospital, Enugu during a one-year period, was undertaken.

Materials and Methods

All children, under the age of ten years, treated as cases of emergencies (outpatients and inpatients) in St Vincent's Hospital, Enugu from 1st January to 31st December, 1973 were

reviewed. The review also included those emergency cases which were subsequently referred to paediatricians for further management. The analysis includes the age of the patient, specific diagnosis, and mortality.

Results and Discussion

During the period covered in this review, there were 1,856 paediatric emergencies. Of these, accidental injury was the commonest, accounting for 456 (25 per cent) of the total number of cases (Fig. 1). Accidental injuries occurred most commonly among children aged, 18 months to five years, and the injuries comprised cuts and wounds, accidental falls from beds and staircases, nail punctures to feet, foreign bodies in the nose and ear, and fish bones in the throat. A majority of the victims of these injuries were children from working class families living in urban areas. The accidents occurred frequently when parents were at work. The types of accidental injuries in relation to the age of the children are shown in Figure 2. It will be observed that falls and minor cuts were common among children below the age of two years, while all the major accidental injuries occurred mostly among the 3–6-year olds. The high incidence of accidental injuries as revealed in this review makes it mandatory for a general practitioner to be an expert in dealing with them.

Since a majority of these common accidents are managed by general practitioners, casualty officers in University Teaching Hospitals are unlikely to have adequate experience in dealing with such cases. It is therefore suggested that attachment of medical students to general practitioners for short periods be seriously considered in the formulation of medical curriculum.

Gastroenteritis

Gastroenteritis was the second most common emergency. There were 418 (22.5 per cent) cases in the series (Fig. 1). Although occurring throughout the year in newborn and young infants, the incidence was higher during the rainy season, especially in the older children who eat fresh, unwashed maize and half cooked green vegetables. Widespread use of feeding bottles appears to have also contributed to the high incidence in infants.

In general practice, there is very little time to waste in starting management of these patients. There is hardly any facility to monitor serum electrolytes before or during therapy. Patients with mild and moderate dehydration, in whom vomiting was less marked were rehydrated by the oral route after intramuscular administration of metoclopramide (plasil) or of promazine (sparine) to control the vomiting. If vomiting continued inspite of administering anti-emetic, rehydration by subcutaneous infusion, using $\frac{1}{5}$ N saline in 4.3 per cent dextrose, was the rule. If diarrhoea was prominent and profuse, half-strength Darrow's solution was given subcutaneously. For severely dehydrated patients, there is no substitute for intravenous infusion using the scalp or any other superficial vein. I personally give 50–55 ml/kg body weight of the fluid. Although electrolytes should normally be determined before and during the infusion therapy, there is hardly any facilities for this to be carried out in general practice. I have seen many patients even in teaching hospitals die a biochemical death from overhydration by enthusiastic residents. However, even where there are no facilities to monitor serum electrolytes, death from overhydration may be avoided provided the drips are monitored and full strength Darrow's solutions or normal saline are not used. It is advisable that every doctor going into general practice should be able to set up scalp vein drips. I personally do not believe in intraperitoneal route for rehydration since it has no distinct advantage over the subcutaneous route; it is fraught with danger and has no place in the rehydration of a severely dehydrated child (Ransome-Kuti *et. al.*, 1969).

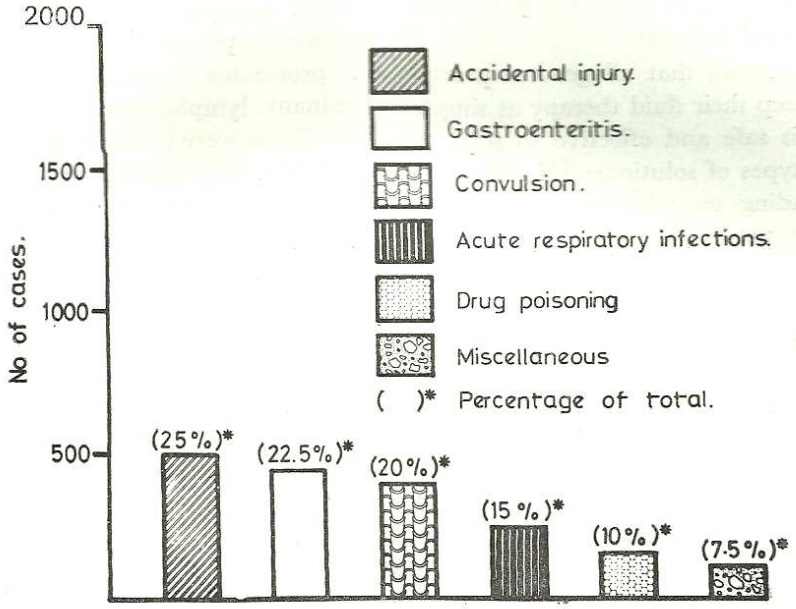

Fig. 1. Common paediatric emergencies in 1856 children. Note the high incidence of accidental injury, gastroenteritis and convulsions.

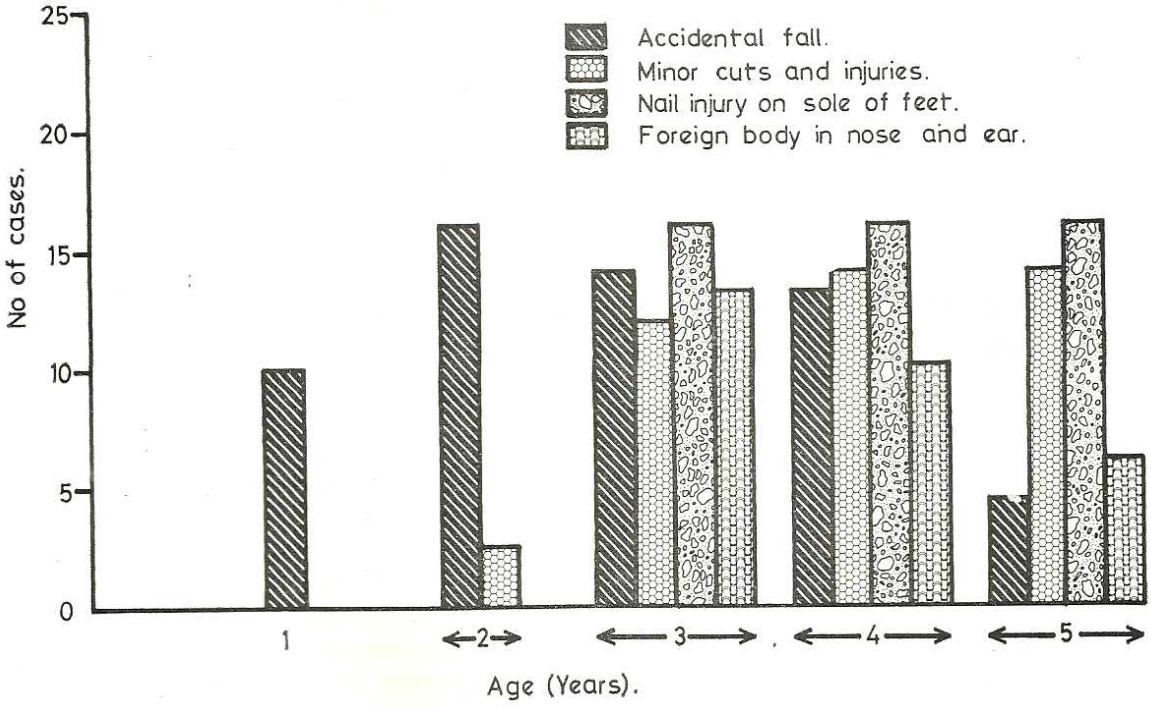

Fig. 2. Major types of accidental injuries among 456 children.

I have seen children die of shock and peritonitis from intraperitoneal infusion.

I would recommend that all general practitioners should keep their fluid therapy as simple as possible. It is safe and effective to stick to the use of two types of solutions: $\frac{1}{5}$N saline, or Darrow's depending on whether vomiting or diarrhoea is the predominating symptom.

Convulsion

Convulsion, associated with high pyrexia, was the next common emergency problem in the present series. It occurred in 371 (20 per cent) of the patients (Fig. 1). The common identifiable causes of this symptom are summarized in the Table. Malaria infection was the commonest cause, occurring in 223 (60 per cent) of the 371 patients. Diagnosis of malaria was based mainly on subsidence of fever within forty-eight hours following administration of chloroquine. No blood smears for malarial parasites were undertaken. It is however possible that a few cases of mild viral infections might have been included in this group diagnosed as malaria infection.

TABLE

COMMON CAUSES OF CONVULSIONS IN 371 CHILDREN

Cause	*No. of Cases*	*Per cent of Total*
Malaria	223	60.00
Hyperpyrexia (from any cause)	57	15.00
Otitis media	18	5.00
Virus encephalitis	18	5.00
Meningitis	11	3.00
Miscellaneous	44	12.00
Total	371	100.00

The next common cause of convulsions in the series was hyperpyrexia from non-identifiable causative agents. There were 57 (15 per cent) of such cases.

Viral encephalitis was the diagnosis in 18 patients (5 per cent); the diagnosis was based on protracted convulsions, fever, and predominant lymphocytosis in the cerebrospinal fluid. There were 11 cases (3 per cent) of pyogenic meningitis. The miscellaneous group comprised tonsillitis, pneumonias, gastroenteritis, etc.

Management of these cases consisted of immediate administration of intramuscular paraldehyde to control the seizures, and cold compress to reduce the fever. In a few severe cases, general anaesthesia was used to control the fits.

In every case of fever and convulsions in this series, chloroquine was administered, irrespective of the underlying cause of the fever and convulsions. This practice is recommended in any endemic malarial-infested area.

Acute Respiratory Infections

There were 278 (15 per cent) cases of respiratory infections (Fig. 1). Specific diagnoses in this group included bronchopneumonia, acute bronchitis, bronchiolitis, acute laryngitis, and influenza, but commonest was bronchopneumonia followed by bronchitis and bronchiolitis. The respiratory infections affected children of all social classes.

Here in Enugu, acute respiratory disease is normally seasonal and occurs mainly during a change of the seasons, namely: rainy to dry, and dry to rainy. However, in the present series, there was an epidemic of influenza starting in December, 1973 and this gave a rather false impression of a high incidence of bronchopneumonia in that period (Fig. 3).

Most of the cases of acute respiratory infection received antibiotics. In addition, cases of bronchiolitis received prednisolone and oxygen which we administered by the nasal or intragastric route. It is essential that oxygen is available to every general practitioner because it is frequently life saving in children with respiratory infections.

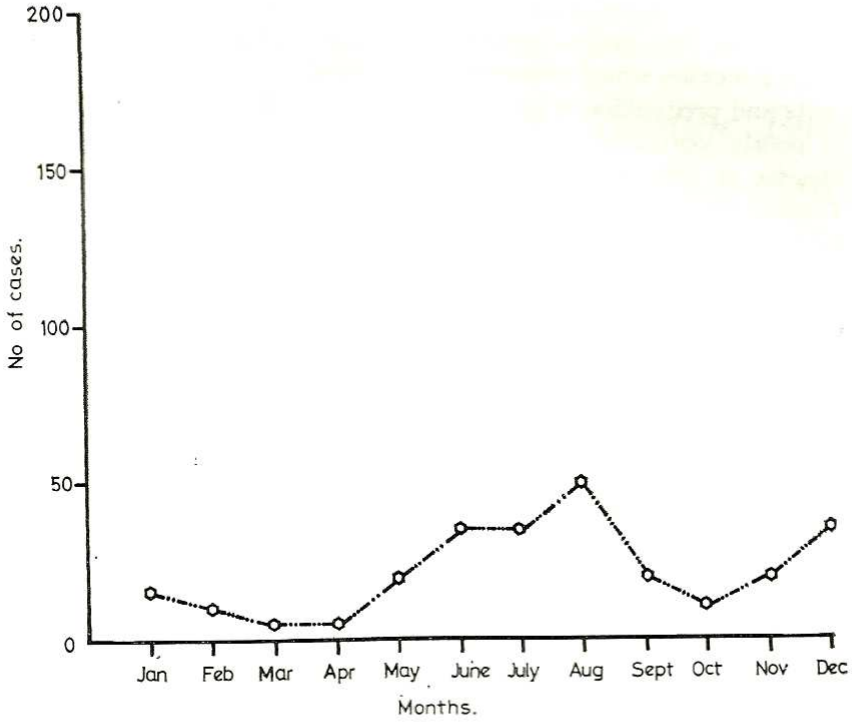

Fig. 3. Seasonal incidence of acute respiratory infections in 278 children.

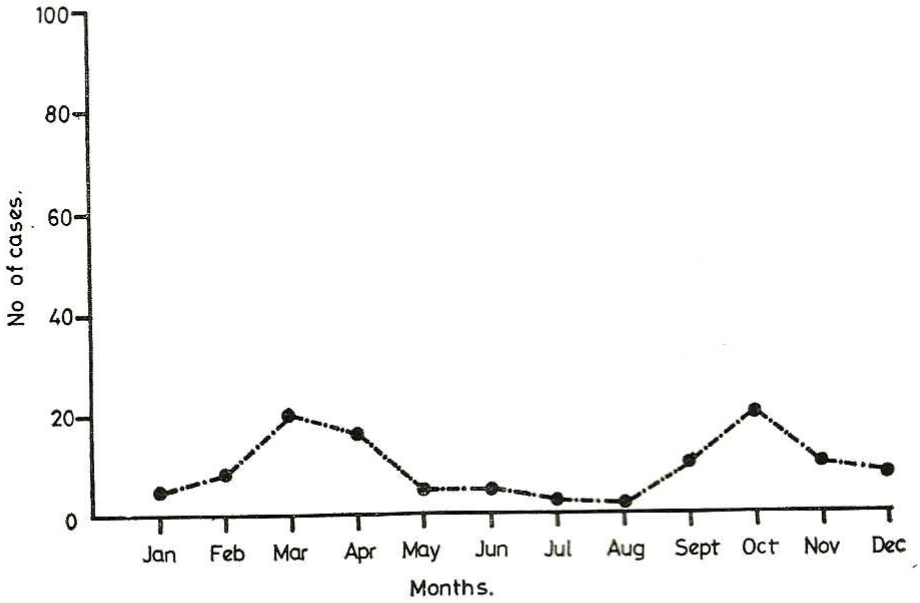

Fig. 4. Seasonal incidence of measles between January and December 1973. Note the two highest peaks in March and October.

With respect to the microbial agents associated with respiratory infections, the largest group were those complicating measles which occurred in biannual epidemics and predominated among children living in poorly ventilated rooms in urban centres. Measles is very severe among children in the Tropics (Morley 1969). Figure 4, shows the seasonal incidence of measles in the present series. Sporadic cases occurred throughout the year, but there were two peaks of highest incidence bordering on epidemic proportions. In most other instances, the microbial causes of pneumonia could not be identified. Only one case was shown to be due to staphylococcal infection.

One interesting respiratory disorder is bronchopneumonia complicating kerosene poisoning among toddlers. As has been observed by Baldachin and Melmed (1964), this is due to aspiration of kerosene into the lungs with resulting gas diffusion problems and infections.

Poisoning

Both accidental and therapeutically-induced poisoning by parents and quacks was an important cause of paediatric emergency. There were 187 (10 per cent) cases in the period under review. Poisoning due to aspirin, phenobarbitone, chloroquine, kerosene, izal, caustic soda, mosquito coils, shelltox, rat poison, and acid, were the commonest in the series. Because of the dangers of self medication and the attendant delay in reporting a potentially dangerous condition to the doctor, paediatrics in this country will continue to be in perpetual state of emergency. Sinnette (1969), has emphasised the need for appropriate and early preventive measures since the incidence of morbidity and mortality is likely to increase with rapid urbanization in Nigeria as well as in other developing countries.

Miscellaneous

The miscellaneous emergencies in this series were 139 cases (7.5 per cent); they included neonatal tetanus, infected umbilicus, bleeding circumcision, burns, intussusception, and sickle-cell crises.

Mortality

The highest mortality occurred among cases with neonatal tetanus, 7 per cent of whom died. The true mortality from neonatal tetanus is likely to be higher than this since we routinely refer severe cases, namely those with spontaneous spasms, to paediatricians. Five per cent of patients admitted with severe dehydration, died; this high mortality was attributed to patients being brought late to the hospital, and in some cases to several forms of self medication at home which complicated the clinical picture. Among children with convulsions, 5 per cent died, and death in these cases was related to the number of fits before hospitalization.

From the present review, it is obvious that about 95 per cent of paediatric emergencies in this series were preventable. Thus the need for preventive paediatrics cannot be over-emphasized.

Infant welfare clinics in which medical education on simple fundamental rules of hygiene are taught, will go a long way in reducing the incidence of paediatric emergencies in our community.

Since most of the emergencies occurred in the under fives and since the majority of our sick population are within this age group, the health of the nation as a whole can best be improved by paying more attention to the health care of this numerable group.

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