

SPECIAL ARTICLES:

PATTERNS OF DISEASE AS SEEN IN HOSPITAL*

By

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In a paper presented yesterday, the major causes of mortality and morbidity in West Africa were discussed. It was interesting throughout the reading of that paper to note that most of the important points raised, the distribution of disease among various age groups and the commonest diseases in Nigeria (Ibadan) were almost identical in their broad outlines with the pattern of disease as seen in Hospital practice in Ghana. This is not surprising for the following two reasons:—

1. Ghana and Nigeria are in the same geographical belt and have a lot in common.
2. Professor Hendrickse's figures were drawn from a large Hospital in Nigeria and therefore represented up to a point, the pattern of disease as seen in Hospital practice in Nigeria.

In this paper, I shall attempt to deal with the pattern of disease as seen in Hospital practice in this country. The statements, conclusions and inferences which I have drawn are based on analysis of 1 year's admission record notes and partly on my 6 years' experience as a General Duty Medical Officer in District Hospitals in this country. I have also made use of personal communications and a few articles from Medical Journals.

Those of you who work in this Hospital, or in this country, will appreciate the difficulties in the way of anyone attempting such a task. Records have not been properly kept; notes are incomplete, the doctors and the nurses have not filled in forms properly, and therefore, at best, this will be an indication of trends of disease only. It has not been possible to analyse all records for all diseases for the year in question but all records of admission into the hospital for the year 1965 with Tetanus, Gastroenteritis, all Respiratory diseases, Bronchopneumonia, Lobar pneumonia, Bronchitis and Bronchiolitis, Meningitis, Renal Diseases and Neoplasms, benign and malignant have been

scrutinised. I shall necessarily have to sing Prof. Hendrickse's song "Tetanus, Respiratory Diseases, Malaria, Measles, Protein Calorie Malnutrition, Sick Cell Anaemia, etc." but if I should go a little off key now and then, it is because, we are a little different.

It is impossible in the half hour allowed for this paper, to touch on all the various groups of diseases. I therefore propose to leave out the diseases of Malnutrition and Under-nutrition, Kwashiorkor and the Vitamin deficiency diseases but not because they are any the less important. The pattern of Kwashiorkor is very well known to all practitioners in this country and elsewhere and like Ibadan, the peak incidence is between 2 to 4 years due to prolonged feeding on the breast. Kwashiorkor, however, is not being dismissed lightly, because since the P.M.L. Hospital in Accra was turned into a Malnutrition Hospital, there has hardly been an empty bed. It is common knowledge that the infant mortality rate in this country is very high: various estimates put it between 100 and 250 per 1000 live births. A significantly large proportion die within the first month of life and the reasons are not far to seek: inadequate antenatal and postnatal care, inadequate obstetric, maternal and child welfare services, ignorance, taboos etc. If there are any here who had any doubts about the effects of some of our customs on the mortality rate of our children, Dr. de Graft-Johnson must have removed them in her brilliant paper yesterday on "Society, Culture, Tradition and the Child".

A large number of children are admitted into hospital in a late stage of their disease, and in quite a few cases almost in the throes of death. It is important here to try to find out why this is so as it determines to some extent, the type of patient seen in the hospital.

Firstly, there is the inconvenience of hospitalization of little children and the expense involved. Even though there is only a nominal charge for drugs, hospital treat-

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ment can be expensive for people who have to rely on taxis or other hired transport to visit their children daily in hospital in view of the fact that the public transportation system is poor. The problem in district hospitals is not so acute as parents can walk to hospital; but where the family lives outside the town in a village, they are not likely to embrace the suggestion of hospitalization with much enthusiasm.

Secondly, mothers who have a large number of children in the house and who do not have domestic help find it very inconvenient to have other children in hospital.

Thirdly, traditional concepts die hard, and what we see in hospital is the terminal stage of disease. The medicine man has had a good try before the child gets to the Hospital. Quite often, in the case of illness presenting as a convulsion, one has to treat the patient as well as the results of his previous treatment such as (a) infected incisions on various parts of the body but particularly on the face, wrists and ankles, sacrum and over the liver and spleen if these happen to be enlarged. (b) ulceration of the corneae due to the instillation of irritants into the eyes—a common favourite is Florida water but juices from various herbs are used. (c) burnt buttocks as a result of sitting the child in hot water or instilling it into the rectum.

In this connection, peritonitis arising as a result of giving enemas with irritants such as hot pepper, ginger, dettol and other chemicals has been seen often enough and one must always enquire about this in every case of obscure abdominal distension in an infant.

Fourthly, the need for a death certificate is often the only reason why a child is brought to hospital at all. It becomes a matter of convenience for the parents to rush the child in to hospital to facilitate the process of its disposal, as it were. This is a sad comment but quite true.

Finally, children come to hospital so late because the parents are ignorant and uneducated about the nature and causation of disease and cannot appreciate the seriousness of a disease until it is too late.

Neonatal Period

There is a very high incidence of prematurity in Ghana with its attendant hazards of neonatal jaundice, kernicterus, gastroen-

teritis, upper respiratory tract infections and moniliasis. Haemolytic jaundice due to Rhesus incompatibility is uncommon, no doubt due to the small percentage of the Rh-ve blood group in the population (less than 5%). Kernicterus is common among the premature babies as one would expect but occurs also commonly in full term babies with G-6-PD. deficiency.

Congenital Abnormalities. Younn (1963) in a series of 286 post mortems performed in this hospital, found a 5% incidence of major congenital abnormalities (14 cases) in children 0-6 years; 9 potentially harmful malformations and 176 incidental anatomical deviations.

Gross abnormalities were prevalent in the:

| | | |
|------------------------|-----|---------|
| Cardiovascular system | ... | 8 cases |
| Central nervous system | ... | 4 cases |
| Alimentary tract | ... | 2 cases |
| Skeletal system | ... | 2 cases |

Congenital dislocation of the hips is rare. No cases were recorded in the year under review. The point raised yesterday that the apparent rarity of this condition is due to the fact that the babies are carried on the back is untenable. In the first few weeks of life, most Ghanaian babies are not carried on the backs—factual information—they lie on mats and pillows and sleep most of the day. The legs go into abduction on the backs at 2-3 months at which period, should the condition in fact be common, it ought to have been diagnosed. It should in fact be diagnosed at birth. Paediatricians must bear this in mind as there is a large number of Europeans including Italians in the community.

We have now in our wards, our first pair of Siamese twins, delivered normally on the district by a trained midwife. The twins are joined in the lower abdomen; they have a common umbilicus and a common anus. They have three legs and two sets of external genitalia. One of the twins has a dextrocardia and it is possible that if a situs inversus is present that they share a common liver. Mongolism (Down's Syndrome) is more common in this country than usually realised. In the past, these cases were missed in babies and certainly not recognised in young infants. de Graft Johnson working at the P.M.L. Hospital in 1962 saw 41 cases. The features are the same as elsewhere, and 25% of the mothers were in the 41-45 age group, 22% of the mothers in the 46-50 age group.

Tetanus neonatorum continues to exact its toll. The disease usually starts within the first or second week of life. The picture is familiar; the child refuses to suck, has a feeble cry, is lethargic and has spasms. Almost invariably the cord is infected. Tetanus occurs not only in babies delivered by traditional midwives but in babies delivered in hospital and in the clinics of qualified midwives. In these cases, the child is discharged too soon (because the mother has been discharged by the obstetrician) and the mother fails to attend for dressings and invariably the baby is handed over to the grandmother who treats the cord as her mother and grandmother had done before her. In some parts of the Volta Region where deliveries take place in the sand, tetanus is rife.

In 1965, in this hospital, 67 cases of tetanus were admitted in the children's department. Of these 44 were in the neonatal period.

NEONATAL TETANUS (1965) K'BU. HOSPITAL

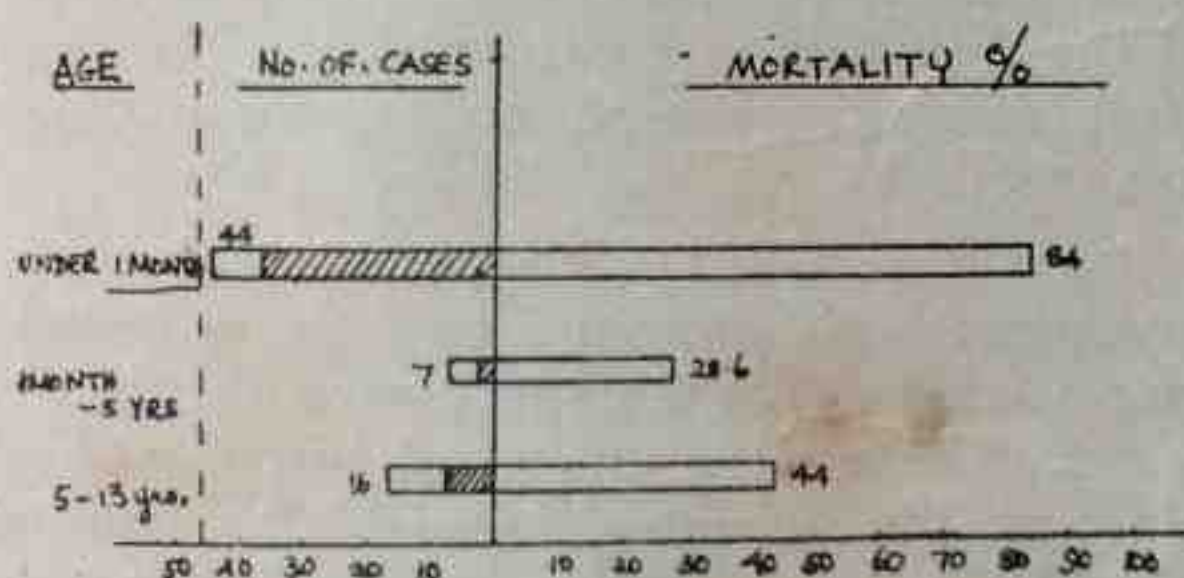


Fig. 1

The cord had been severed by any sharp instrument including pen knives, scissors, razor blades, bamboo knives, broken bottles, etc. and had been dressed with various preparations of herbs, concoctions, black powder etc. Death occurred in 30% of cases in less than 24 hours but some survive for as long as 28 days, and then died of inanition. There is no seasonal variation, (Fig. 2), tetanus being present all the year round.

The mortality rate in neonatal infants was 84% (Fig. 1); the over-all mortality in children in the 5-13 age group was 44% and of all children under 13 including neonatal infants 70%. The figure of 44% in 5-13 age group is approaching the adult mortality rate for tetanus. Note the rise in the number of cases after school-going age at 5. This is the age at which the children are liable to

have cuts, sores and bruises which become infected as a result of playing in dirt or in the garden.

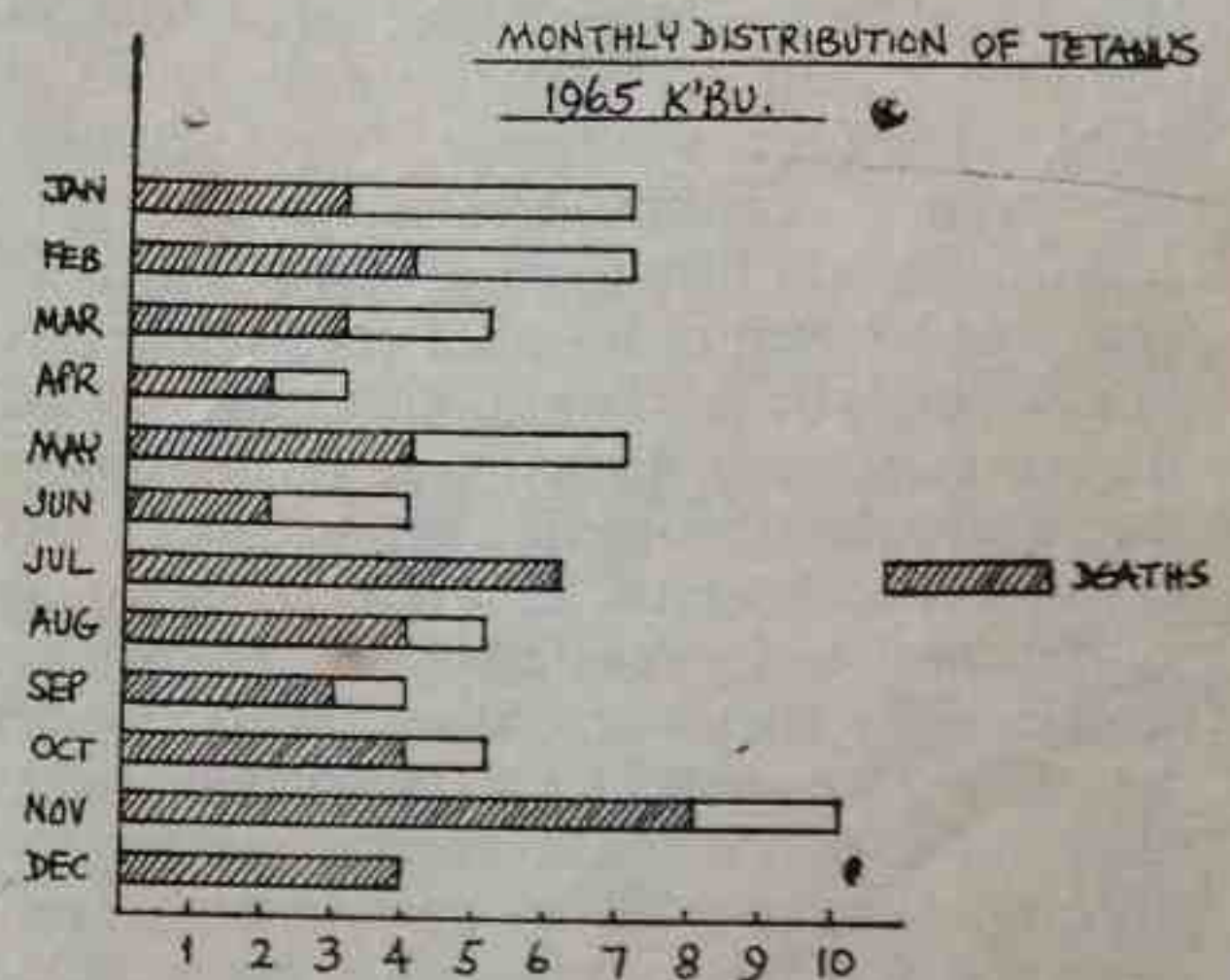


Fig. 2

Age Group 3 months—2 years

Remembering that most of the children admitted were acutely ill, the commonest causes of admission were malaria, anaemias due to malaria, sickle cell disease and hookworm, nutritional anaemia; upper respiratory tract infections, broncho-pneumonia, bronchitis and bronchiolitis, virus infections notably measles, and gastroenteritis.

Malaria: Unlike the situation in Ibadan, malaria in the first 3 months is not uncommon. I have myself admitted several babies with severe malaria during this period. What is more, and assuming that the Laboratory is to be trusted, positive blood films have been reported in 2 and 3 day-olds, (? Congenital Malaria). Infection can be very heavy in non-immunes as occurred 2 weeks ago in a 17-day old Jamaican baby whose blood-film showed 60/1 M.P.s. The mother had lived in England for 3 years.

Cerebral malaria is a common cause of death among the malaria cases. They tend to be quite well nourished children, and have repeated fits without gaining consciousness. Convulsions were often produced in hospital by the injudicious administration of Nivaquine injections to very anaemic patients with pyrexias of 101°F and above. This is courting trouble. Quite often the dosage of Nivaquine given was excessive (it should never exceed 5 mg base/kg body wt). I am sure some deaths were caused in this way.

Sickle Cell Anaemia: As elsewhere, the symptoms of sickle cell disease do not become

a problem before 4 months, though crises have been seen within the first 3 weeks of birth here. The pattern is one of recurrent attacks of low grade fever, abdominal discomfort or pain, and diarrhoea, dactylitis, the hand and foot syndrome (most common presentation in babies) anaemia and jaundice. Joint pains are dismissed as rheumatism and the patients seen in hospital are usually those in a haemolytic or thrombotic crisis. Deaths due to sickle cell disease was in my opinion due to the severe anaemia per se, the children coming into hospital as white as sheets and blood not being available for transfusion. This is why they die. With all due respect to the pathologists, I am inclined to believe that some of the intravascular sickling and thromboses reported at post mortem are a terminal feature only and not the cause of death. Where ring haemorrhages have occurred in the brain as a result of massive intravascular haemolysis, there can be no doubt.

Kept on regular antimalarial prophylaxis, most children do well if the folic acid deficiency which most of them have is made good and all intercurrent infection promptly treated.

A pattern which is being seen quite often now is deep jaundice, quite distinct from the lemon-yellow discoloration of the sclerae. Differential diagnosis from infective hepatitis can sometimes be difficult and it is therefore important to do the sickling test before deciding that a case is infective hepatitis.

Gastroenteritis This continues to be a serious problem. In 1965, in this hospital, 216 cases of gastroenteritis were admitted (1 month—2 years). Most of the cases were severely dehydrated, quite a few had metabolic acidosis and/or peripheral circulatory collapse and cyanosis. Of this number 47 died, a mortality rate of 23%. The clinical state was serious enough to warrant the setting up of intravenous (I.V.) drips in 47% of the cases, subcutaneous infusions in 13.6% of cases, making a total of 60.6% requiring parenteral fluids. It has been suggested elsewhere that in tropical countries where the incidence of gastroenteritis is high and hospital facilities are poor, more time is gained and equally good results obtained by giving intragastric and intraperitoneal infusions. This has not been our experience here. It is a tribute to our Medical Officers that the only complications were a few cases of thrombophlebitis (less than 10).

The stools were examined microscopically and also cultured. Known pathogens were isolated from 78 specimens, (32.4%), of which 27.7% were *Shigella flexner*, all types but commonly Type 3 followed by Type 2. *Salmonella* of all types accounted for 3.7% of cases.

Specific *Entamoeba Coli* contributed towards 18 cases, (8.3% of cases) but we must bear in mind that there were no controls, this not being a trial but a survey. The breakdown was as follows:—

| | | |
|------------------------------|-------|---------|
| Specific <i>E. Coli</i> Type | 0.119 | 8 cases |
| | 0.111 | 4 " |
| | 0.126 | 2 " |
| | 0.127 | 2 " |
| | 0.55 | 1 case |
| | 0.26 | 1 " |

These figures compare with a study of Infantile Diarrhoea in Cairo by Mohiedin et al (1965) in which they found known pathogens to be responsible for 27½% of cases (100 cases studied), *Shigella flexner* being responsible for 22%. The relatively high incidence of Shigellosis stresses the role of these organisms in the aetiology of gastroenteritis. In Accra, 70% of cases showed no known pathogen in the stools.

The importance of accurate laboratory investigations cannot be too strongly emphasised. These figures were drawn from a period when the Bacteriologist was available in this country. Going through the records, in April, 1964, when he was away on a Conference, stools continued to be cultured, but no single pathogen was isolated.

Our attention is being increasingly drawn to the occurrence of amoebic dysentery in children under 2 years of age. Of the 9 cases described on the opening day by Dr. Christian, 2 were in children under 2 years, one under 6 months (my case).

Stool examinations on these children are usually negative; most are diagnosed at autopsy. A retrospective study of all these case notes show that they have a pattern of their own. They present as ordinary gastroenteritis but soon the stools instead of being watery become loose, the colour is greenish brown to greyish brown, tend to be sticky and have a horrid smell. There is usually tenderness on touching the abdomen and in the terminal stages a picture of ileus and peritonitis occurs. Post-mortem reports usually show amoebic

colitis. In one baby under 1 year, a liver abscess was present.

Respiratory Diseases: As one would expect, these occur most commonly in children under 2 years old. They occur all the year round, but it would appear that more cases are admitted during the rainy and wet season from June to October, than in other months.

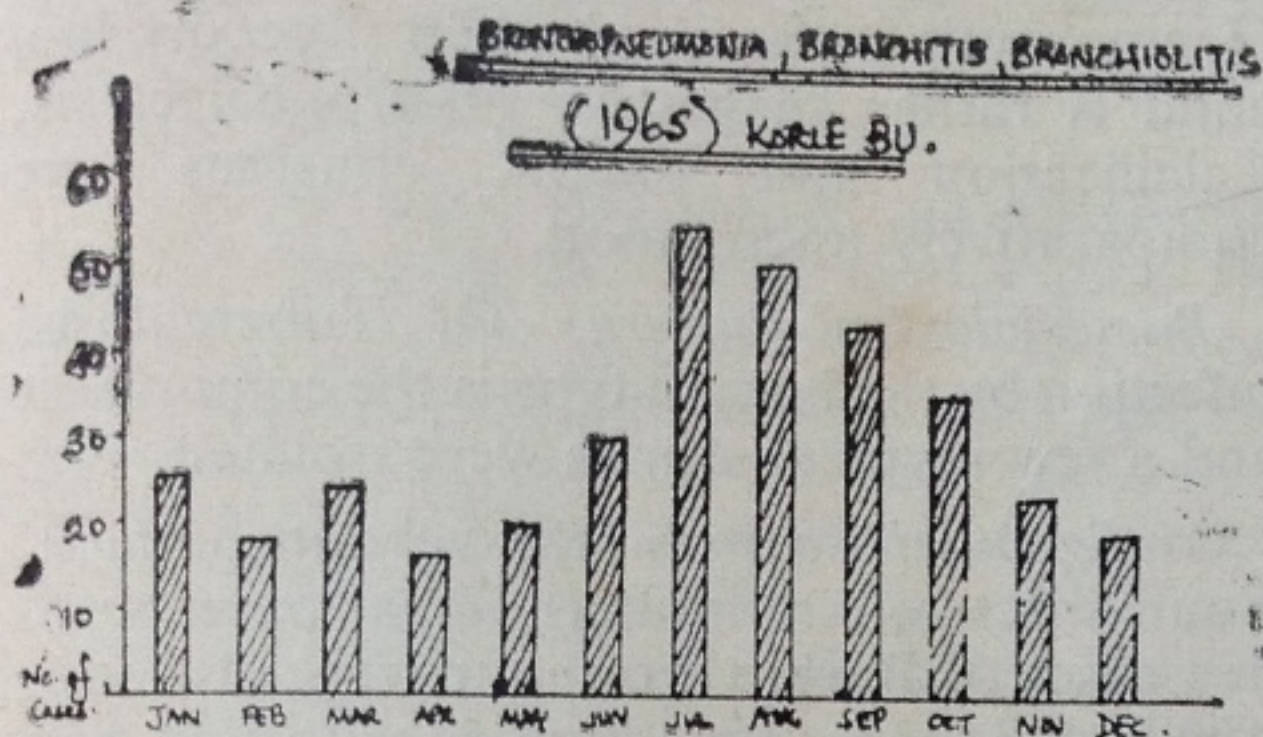
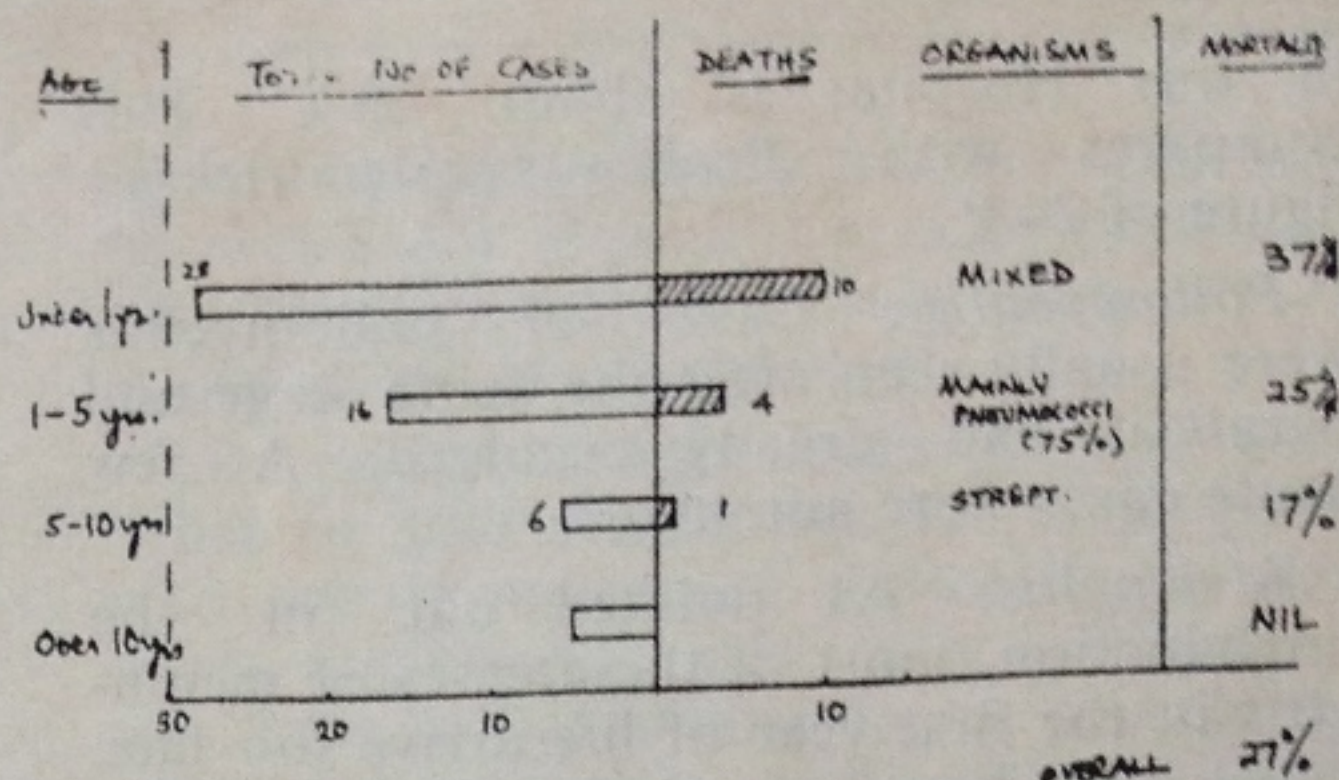


Fig. 3

Excluding bronchopneumonia as a complication to measles, 333 cases were admitted in 1965; there was an overall mortality of 17%. In children under 1 year, bronchiolitis with severe respiratory distress with or without intercostal recession and subcostal retraction, some cyanosis and usually minimal physical signs were common. These cases usually did well, the average duration of stay in hospital was 7-9 days.

Measles: I shall introduce the subject of measles here as it is usually accompanied by a bronchopneumonia. Measles in Ghana is a very serious disease in children under 5 years of age. The type of cases admitted into hospital is the child who has had the rash for 2 or 3 days, has been treated at home or elsewhere and has developed a complication or is too ill from the toxæmia of the disease itself. The picture of a really bad case is not pleasant. There is usually severe purulent conjunctivitis, so severe that the eyelids cannot be separated, the eye lashes being matted together with pus. The nostrils and mouth are ulcerated making feeding difficult. Ulceration in the perineal region is also common. Dehydration is marked and the temperature is usually above 101-102°F. Bronchopneumonia, croup and acute laryngitis may be very distressing. Severe substernal and intercostal recession may be quite frightening. Tracheostomy has been performed in a few cases. An



BACTERIAL MENINGITIS, EXCLUDING T.B.

Fig. 4

interesting feature is that quite often the bronchopneumonia and diarrhoea precede the rash by a day or two, so that it is common to admit a child into the ordinary wards with bronchopneumonia only to find that he has developed measles 2 days later. In malnourished children, corneal ulceration leading to blindness is sometimes seen.

Boi-Doku (Personal communication) in 1962 in a series of nearly 1,800 autopsies found death due to bronchopneumonia complicating measles in 205 cases. The current mortality rate of children with Measles admitted to the Isolation Wards

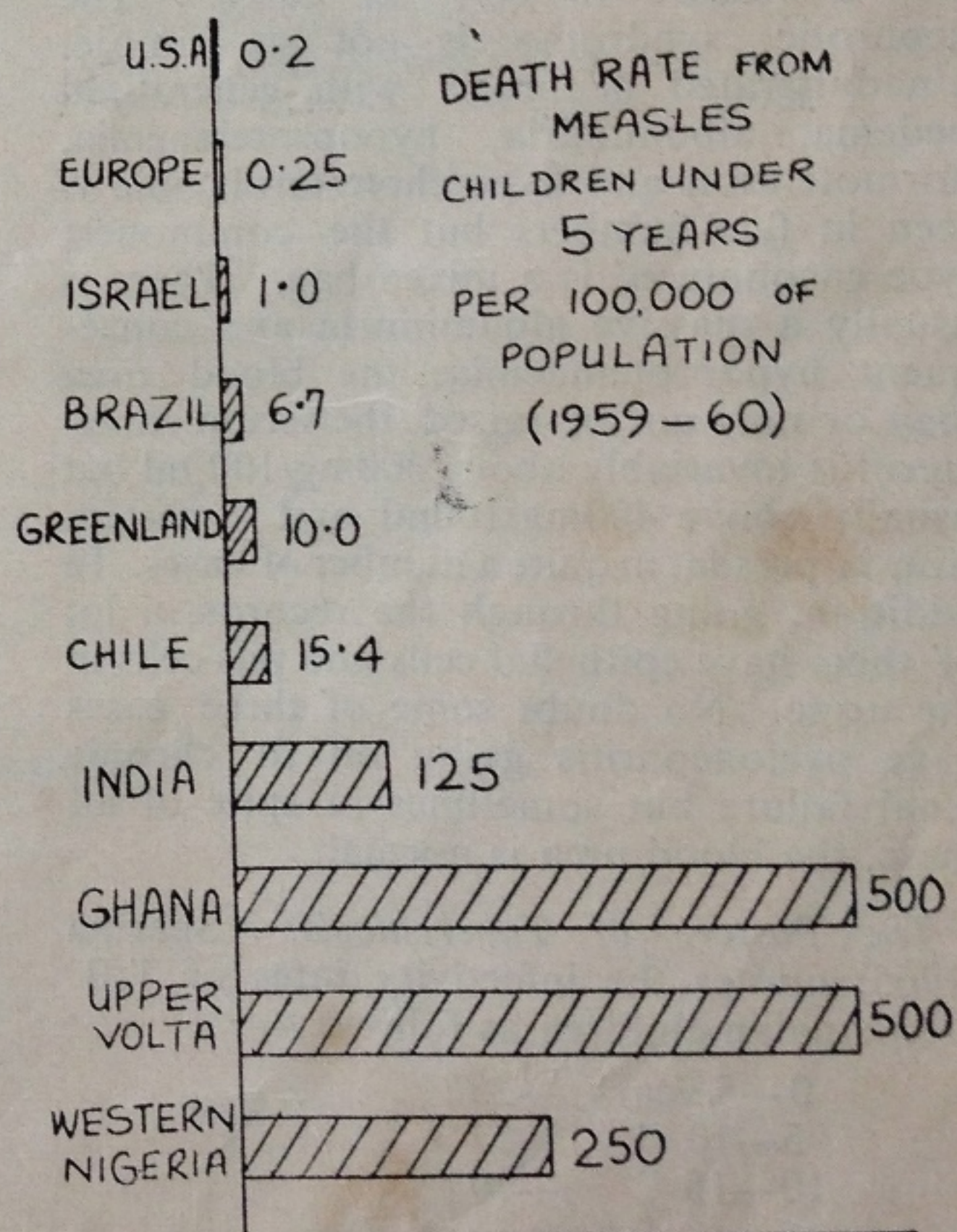


Fig. 5

in this Hospital is about 20%. This compares with Professor Hendrickse's figure of 24%.

Poliomyelitis: Cases of poliomyelitis were usually seen after the acute stage and paralysis had already occurred. A few acute cases were admitted.

Meningitis: As pointed out in the introduction, most of these cases of meningitis in the first year of life arrive too late. Most have been missed elsewhere (and we have missed a few). Cerebrospinal fluid examinations are usually negative for organisms. This pattern is so probably because most of the cases referred to hospital would have had a course of antibiotics already—certainly Terramycin. Of the cases in which organisms were found, pneumococci, meningococci, *Haemophilus influenzae* and Streptococci were the commonest organisms in that order of prevalence.

Renal Diseases present special problems in diagnosis. In this hospital, acute nephritis occurs from 2 years onwards with a peak between 3–5 years. In only 30% of cases was a B-haemolytic Streptococcus isolated from the throat. Hypertension was a feature in 60% of cases. The nephrotic syndrome is not so simple. Unadulterated nephrosis with generalised oedema, albuminuria, hypoproteinaemia, normotension and hypercholesterolaemia is seen in fair numbers but the commonest type encountered is a mixed bag. There is usually a massive albuminuria and consequent hypoproteinaemia, the blood urea may or may not be raised, the serum cholesterol is invariably above 300mg/100ml but usually above 400mg/100ml and hypertension is present in quite a number of cases. In addition, going through the records, a lot of them have epithelial cells and pus cells in the urine. No doubt some of these cases have pyelonephritis going on to chronic renal failure but sometimes in spite of all these, the blood urea is normal.

The Pattern of Tuberculosis: Sharma (1965) quotes the infectivity rates of T.B. in Ghanaian children as follows:—

| | |
|-----------|------|
| 0–5 years | —25% |
| 5–10 " | —27 |
| 10–15 " | —40% |

The clinical pattern of the disease has a wide spectrum. Most of the children are

well nourished, have no complaints and are discovered as incidental findings.

Miliary tuberculosis and tuberculous meningitis were more common in children under 3 years. Christian quotes the percentage of children with miliary T.B. with meningitis at post-mortem as 40%. Cervical and hilar adenitis are common and, in this connection, repeated attacks of so called asthmatic attacks in a child should be suspect. Haemoptysis is rare and when it occurs in a child is rather suggestive of bronchiectasis. Calcification and pleural effusions are comparatively uncommon.

Bacteriological Pattern: Of Tuberculosis, infection by the human type is the commonest and a few atypical strains were isolated.

Malignant Disease is relatively uncommon. Four cases of retinoblastomas were seen, five cases of Burkitt's tumour were also seen of which 3 died. One, treated with Endoxan improved remarkably but has unfortunately failed to attend the follow-up clinic. One case of nephroblastoma was seen. Three cases of leukaemia aged 4, 6, and 9 years were reported, the type in the 4 year old child being monocytic. Benign neoplasms were mainly haemangiomas.

Psychiatric Disease: I leave this to the Psychiatrists to enlighten us on this very important subject.

Diabetes in children was rarely seen. When it occurred, it followed the usual pattern and was insulin dependent. I did not see a single case in the year under review.

Bilharzia: In certain hospitals in this country, bilharzia was seen in a lot of children attending Hospital. It was so common in one district Hospital where I worked for 4 years that a leading question about it was a must in taking the history. Passing blood in urine had, so far as the community was concerned, always been with them and was regarded as part of the process of growing up. They came for consultation because they had measles and not to tell me about the haematuria which was quite often well demonstrated in the consulting room on to my trousers. The point was usually well taken and appropriate action initiated. But the point is to what purpose? It is fighting a losing battle, as they go back to the same streams and promptly get reinfected.

Acute Emergency Admissions were usually on account of convulsions, poisonings,

especially with kerosene, and intoxications from unknown concoctions some of which were pretty potent, certainly just as good as "cow's urine and tobacco".

Bleeding circumcisions are common. Bleeding from pierced ear lobes is rare but one case has been seen recently here in which the poor girl was almost exsanguinated. Incidentally, this is not one for endorsing the card by the Casualty M.O.: "Refer E.N.T. Surgeon".

Mr. Chairman, all through the symposium on the Opening day, and throughout the Scientific papers, we have been told how deaths could be prevented if parents believed less in witchcraft; didn't get themselves steeped up too much in tradition and brought their children to hospital early. What part is the Hospital to play in all this? I would like to end on a solemn note: that in spite of health education, in spite of mobilising all our resources in various campaigns in literacy etc., cases and very serious cases will continue to arrive in hospital in the throes of death.

Our function as Medical men and women and as nurses is to save. One of the reasons why some people come so late to hospital is that they are afraid of the Nursing Staff, of the rude way they are sometimes treated

usually by junior nursing staff and sometimes by nurses not so junior; and of the doctors who shout at them at a time when they are under severe emotional stress.

Our problems, Mr. Chairman, are many. What we need are doctors and nursing staff who are a little more dedicated to their work; doctors who won't pass the buck and say "refer to this or that doctor", when they know that the case is serious and they could take immediate first aid measures; always remembering that in whatever medical specialty we find ourselves, we all trained as doctors first; doctors who won't order a subcutaneous drip when they know it is an intravenous drip that is needed because they are too lazy to set it up themselves; nurses who don't leave the sick child's food by his locker and disappear from the wards because it is 8 o'clock and they have a date.

In this way, we shall be able to save a few and in saving the few, we shall be able to save the many.

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