

ordinated, and shortly after was added knowledge of the type of infection carried by wild rodents, now known as sylvatic plague. By now the fight against the "Black Death" had commenced along planned lines by means of destruction of rats, isolation of individuals in contact with infected persons, quarantine, and the use of treatment sera and preventive vaccines.

In recent years great progress has been made. The discovery of powerful insecticides such as DDT, and of efficient therapeutics such as the sulpha drugs and streptomycin have given greater hope for conquering this age-old scourge. The World Health Organization has formed an Expert Committee on Plague for the purpose of combining all known methods of attack against what was once an almost unknown enemy. During the recent meeting of this Committee, held at WHO Headquarters in Geneva a system was planned for the compilation and assessment of all existing data, the carrying

out of full treatment measures and the detailing of methods of eradication of plague centres.

It is planned that a group of specialists in this field will be sent to India, where the disease today presents a very grave problem. There they will demonstrate plague eradication work for the first time on an international scale. Other demonstration areas for plague eradication recommended by the WHO Expert Committee include one of the infected islands off the coast of Africa (Azores or Madagascar), Morocco, the Belgian Congo, and China.

In these plague centres the use of DDT, "1080" (sodium fluoracetate), and streptomycin, combined with the expert knowledge available today, will demonstrate in actual practice the ability of modern science to conquer one of man's most dreaded enemies.

(By Courtesy of World Health Organization.)

TRENDS IN THE TREATMENT OF TYPHOID

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PART I

Preventive treatment to-day forms the basis of all modern medicine. With regards to typhoid these measures are the problem of the Public Health Department. Still all members of a community can greatly aid these authorities by helping the campaign of sewage and soil disposal also by guarding against the housefly. Water, milk and meat often come under the law in many countries. Persons found selling contaminated meat and fish are liable for prosecution. In London, local authorities coming under the London County Council, go a step further, they provide certificates of cleanliness, or badges are given as an award to encourage catering establishments to be proud of their hygienically maintained store or

cafe. Thus the need for the individual to show a civic sense of social responsibility is created.

While gathering the data for this article, both doctors and experienced administrative nurses emphasised that they are still of the opinion that no matter what the potentiality of the new drugs, nursing treatment and the untiring attention to skin, pressure points, the mouth etc. are of primary importance.

Since this article is chiefly for post graduate nurses, I shall endeavour to specially go into the diet of the patient giving those used by two different physicians. Again let me state that the nurse must observe her patient most carefully and it will be seen that it is from their reports that the doctor varies his treatment. Therefore, team

work on the part of the staff is essential.

The days of whey and albumen water as the one and only correct diet have long since gone. Lt. Col. Leslie, I.M.S., was the first to revolutionise this treatment in India.

Physician A's Diet.

Consists of Arrow-root Conjee 2 pints, and Sago conjee 2 pints with well, skimmed buttermilk, 2 pints per day. Orange juice or Tomato juice 6 to 8 ounces to which is added glucose half to 1 ounce. This gives a caloric value of over 1,500 calories. This is for uncomplicated cases. Should the nurses report diarrhoea, the patient is mainly nursed on whey, albumen water and thin arrow-root conjee till the diarrhoea is controlled. Should there be constipation, the quantity of arrow-root conjee is reduced and more of sago conjee and milk given. It is better to citrate the milk even in cases of constipation; Pulv. Sodii Citras gr. 5 are added to the feeds. When the temperature reaches normal, and all goes well for three days, the patient is given a portion of bread boiled in milk, milk feeds, custard and mashed potatoes. 6th day of convalescence, rice and curds are given. 10th day he is discharged and advised to continue this diet for a fortnight.

This diet was supplemented with Shark Liver Oil 2 drachms to one ounce of emulsion, so that the patient will get 600 calories per day. This oil supplies Vitamins A and D.

Drug Treatment.

Chloromycetin is advocated by Physician A as this anti-biotic has been found effective against typhoid and Salmonella infections. The great disadvantage is the high cost. Chloromycetin is supplied in capsules of 0.25 grams of 12 in a bottle. The initial dose is 50 mms. per kilogram of body weight. Physician A advocates 0.25 grams very two hours till the temperature returns to normal and after that, 4 hourly for the next five days. The total average dose being 19.1 grams

per patient for about 8 days. No toxicity is observed.

While employing this form of drug and dietary in the treatment, the nurse must note the stools and urine most carefully. She should examine specimens of stools daily to note whether the patient has diarrhoea, or whether there are any globules of fat while Shark Liver Oil is being administered. The senior members of the staff may send a specimen of urine for culture for seven consecutive days, and it would be of interest to draw the attention of the juniors to stools and urine and to the fact, that when Chloromycetin is administered, the bacilli are usually reported negative even after three days, administration.

Following Chloromycetin, the temperature reaches normal in a couple of days, but while the fever is high the nurse must attend to back and mouth with care. Physician A used equal parts of lime juice and glycerine and said he had not met parotitis for ten years with this nursing care. The chief complications which this physician has reported are constipation, diarrhoea and toxemia. Haemorrhage and perforation, he mentioned last. These will now be discussed in this order.

Constipated patients are given a glycerine enema on alternate days. Nurses will find these patients less toxic and they can easily be given the diet already mentioned.

Diarrhoea in typhoid indicates a toxic case. Here the nurse can show her skill and prove that nursing technique can be something for which she can win the physician's praise. Diarrhoea should be reported at once to the physician. The diet will have to be modified or changed. Physician A prefers thin Arrow-root conjee and no other article of diet for a day or two, since there is no residue by the time this diet reaches the Peyer's patches. Should the diarrhoea persist, a simple acid mixture such as :—

Acid sulphuric aromaticus 20 mms.

Tr. Belladonna 10 mms.

Syrup Auranti. 1 drachm
Aqua Anisi. 1 ounce.

This mixture is given T.D.S. Sodibicarb bowel washes may be given. The nurse giving such a bowel wash will naturally be a senior nurse, with a probationer to help and a little commentary on what she is noting during the lavage, and that at the first sign of even a tinge of blood, the wash must be stopped and a doctor notified.

When once the diarrhoea is controlled the diet can be gradually increased; giving first whey, rice congee, sago congee, and skimmed milk. While the diet is being increased the staff must watch for meteorism. If checked in time by the passing of a flatus tube, a low turpentine enema or turpentine stupes, this complication will not prove of any great discomfort to the patient for long.

Toxaemia is often met with, in patients with diarrhoea and tympanites. Fluids can be given in generous quantity. If oral administration is not possible a continuous nasal drip can be arranged. If there is no diarrhoea, normal saline with glucose can be given continuously.

One of our physicians had placed at his disposal the comparatively new drug "Aldestan". It is manufactured by Chemica Limited, Haifa, Palestine. It is derived from tin. Each tablet contains 0.012 gm of metallic tin. During therapeutic use in this hospital Physician A used 2 tablets T.D. for adults and proportionately less for children; the age and weight being the guide for dosage. The treatment was continued for twelve consecutive days. The drug was discontinued if the mental state deteriorated; fortunately none of our patients had any such sign. The action of this drug is aided by Potassium Iodide 10 grams per day. This we administered in Shark Liver Oil emulsion.

Haemorrhage and perforation are not so common, and need not be dreaded with the advent of drugs like Chloromycetin and Aldestan. Nurses should always be prepared to meet with this emergency. In our hospital the typhoid wards have equipment always ready and the hospital blood bank is on the telephone so that it is not long before a transfusion is ready. In the meantime this physician tries auto-haemotherapy which consists of 15 to 20 c.c. of the patients own blood with about 1 c.c. Citrate solution which is injected intramuscularly. Morphine gr. $\frac{1}{4}$ and Atropine 1/100 gr. can be given. Haemoplastin 2 c.c. subcutaneously every four hours, or Coagulen Ciba 20 c.c. subcutaneously twice a day may be tried.

The diet should be reduced as in a case of severe diarrhoea. Iced feeds, with every precaution taken to prevent a fresh haemorrhage. Small quantities at 2 hourly intervals are reasonable. Still it is best to enquire from the physician if he wants his patient disturbed for feeds. When the blood transfusion is almost completed the nurse should have foresight and inform the physician of the condition of her patient.

During convalescence Physician A keeps the patient in bed for at least 10 days after the fever has subsided. On the third day of convalescence the patient is given the soft portion of bread and milk. On the 6th day they are given boiled rice and curds. 9th day an antiseptic bath is given. The 10th day the patient finds his relatives waiting to take him home with instructions to rest for another month.

There are certain other forms of routine which will be dealt with later in Part 2 as they are of great help to the administrative authorities of this hospital.

(To be continued in December Issue.)

Join the "Miss a Meal" campaign. "By eating what is sufficient, man is enabled to work; he is hindered from working and becomes heavy, idle and stupid if he eats too much."