

serve to transfer it. Clothing, if moist, can retain the infectivity for weeks. When dried the bacilli only survive a few hours; in water they can live for a considerable time. Patients, who have recovered from the disease, may continue to excrete the bacilli for two months; but over 90 per cent. are stated to become free from infection in a month.

The Attack.

The onset is usually sudden, though there may be some preliminary mild diarrhoea and a feeling of depression. Soon the patient begins to pass profuse watery stools, at first faecal in character, but quickly changing to colourless evacuations of thin "rice-water like" fluid containing small white flakes of epithelium. These flow in such quick succession that the patient needs the bedpan continuously. There is no tenesmus or straining with the motions. Complete prostration comes on very early. Vomiting begins, first of food and then of the same rice-water material. Agonising cramps attack the limbs and abdomen, and the muscles feel like lumps, standing out and making the patient cry out with the pain. Pints of fluid are generally lost by the patient—due to the toxins of the bacilli destroying the epithelial lining of the intestine, and so allowing the fluids and salts to escape from the body tissues—and, as a result, the body shrinks, the cheeks fall in, the nose becomes pinched, the eyes sunken and the skin shrivelled—the hands becoming like "washerwoman's hands," as though long immersed in water—the tongue and mouth are dry and the patient consumed with thirst.

The Algid Stage.—The surface of the body becomes cold, livid and bathed with clammy sweat, the patient becomes helpless and lies moaning or whispering feebly. The pulse is feeble or absent, and the respiration rapid and shallow, the mind may remain clear. The blood-pressure is very low, and as a result anuria is usually present. The surface temperature of the body may fall to below 93 deg. F., while the rectal temperature may be 101 deg. F. or over. Death from collapse may occur in 10 or 12 hours, but has occurred in two hours.

The algid stage may terminate in one of three ways: (1) death, (2) febrile reaction, and (3) rapid convalescence.

Reaction Stage.—The body becomes warmer, the pulse returns, the face fills out, restlessness departs, urine may be passed, motions become fewer and less in amount.

Some patients may rapidly convalesce, and in a few days be practically well again.

Usually, however, a febrile condition of less or greater severity may develop. Intense thirst persists, but the pulse improves and with the ultimate settling down of the fever the patient gradually recovers. In severe cases the fever becomes aggravated, and a condition resembling typhoid fever ensues. During the reaction stage death may occur from heart failure, uræmia, pneumonia, asthenia and enteritis and diarrhoea.

Epidemics may show considerable variety in the character and severity of the symptoms. The earlier cases are generally severer than those occurring later. Ambulatory cases with only malaise and diarrhoea may be seen. "Cholera Sicca" is a very fatal type. Collapse sets in so rapidly that the patient, with perhaps no diarrhoea or vomiting, dies in a few hours. Hyperpyrexia—axilla 107 deg. F., rectum 109 deg. F.—is almost invariably fatal.

Sequelæ may be anæmia, insomnia, colitis, nephritis, parotitis, corneal ulceration, bedsores, gangrene of various parts and pulmonary inflammations. Pregnant patients invariably miscarry, the foetus showing evidence of the disease. The mortality is on the average 50 per cent.

Nursing.—The patient is nursed lying flat in the bed, which should be warm, and hot bottles or bricks are needed at first. The room should be well ventilated and not too

cold. Fluid is given continuously in small sips or amounts, warm or hot, and a little soda bicarbonate or calcium permanganate can be given in it. Glucose solution and ice water may be ordered. Copious drinks may provoke the vomiting.

No food at all is given.

The patient will need the bedpan continuously, and it should be warmed. Both stools and vomitus teem with germs and are highly infective. Mark well that the vomiting may be so sudden as to be shot over an incautious attendant. Patients must not be allowed up to pass stools.

If possible record the amount of urine passed. When the pulse is restored twelve hourly records should be kept. The records help to assess the need of further intravenous injections of fluid, or warn of coming anuria.

Cramps may be relieved by warmth or by gentle massage or by short chloroform inhalations.

The body should be kept dry by wiping with a warm towel or cloth from time to time.

Take the temperature in the axilla and rectum. It is of vital importance to know the rectal temperature in order to give the intravenous fluid at the right temperature and avoid causing hyperpyrexia.

When the worst stage is passed, nourishment may be given, as albumen water, barley water, glucose solution, milk and barley water, gruel, arrowroot, cornflour and so on, till the diet is gradually built up. Withhold meat juices until the kidneys are working well. Patients should have their own utensils.

Pay close attention to the pulse in the collapse stage and have the intravenous injection apparatus always ready. In many of the cases instruments to allow exposing the veins are necessary.

When handling patients wear gloves if possible, and be well gowned. Remove the gowns when leaving the wards. Use disinfectant lotion for your hands and see that they are thoroughly washed before taking your meals.

Treatment.—Hypertonic saline solutions given by the intravenous route, as advocated by Rogers, is now the method of treatment, and has greatly reduced the mortality rate.

Medicine in the form of a mixture containing oil of cloves, of cajuput, of juniper and other ingredients, is used with good effect if commenced at the very beginning of the attack, and is useful in treating native patients in large numbers. Potassium permanganate in pill or fluid form destroys the toxins in the bowel. Two grains are given every quarter-hour for the first two hours, and then half-hourly till the stools appear green. Atropine injections hypodermically morning and evening help to prevent collapse. Kaolin or bolus alba is also used. Should suppression of urine occur, dry cupping over the loins with Fenwick's cups or hot dry fomentations may be used, and drugs to raise the blood-pressure given. Warm alkaline solution slowly injected by the rectum may be ordered. Cardiac stimulants may be needed.

Cholera bacteriophage has been given both by mouth and with the intravenous salines. Anti-cholera serum has been tried.

Should constipation occur later no purgatives are given, but enemata used.

In Rogers' method of treatment the progress of the patient is determined by estimations of the blood-pressure and of the specific gravity of the blood made morning and evening. A blood-pressure of 70 mm. or less indicates dangerous collapse. A specific gravity of 1063 or over also shows the need of more fluid by the vein. The passage of large watery stools, renewed failure of the pulse or other unfavourable signs will demand further fluid or active treatment for the patient, and the nurse should report these at once.

[previous page](#)

[next page](#)