TYPHOID

Typhoid is an infectious disease with an acute fever of short duration and occurs only in human... Salmonella typhi causes typhoid, salmonella schottmulleri causes paratyphoid B. Faeces and urine of the patients or carriers of the disease are the source of infection. Drinking water or milk and food contaminated by intestinal contents of the patients or 'carriers' or by flies which often transmit the disease.

Typhoid bacilli do not multiply in water but some may survive for about 7 days. They may survive for over a month in ice and ice-cream. Typhoid bacilli grow rapidly in milk with...

altering its taste or appearance in anyway. Vegetables grown in sewage farms or washed in contaminated water are a positive health hazard.

Incubation period is usually 10–14 days. But it may be as short as three days or as long as three weeks depending upon the dose of the bacilli ingested.

The disease begins in the small intestine, where the bacteria attach to the epithelium of intestinal wall, penetrate this layer, multiply in the mesenteric lymphnodes and eventually reach the blood stream. Here lysis of the bacteria by the action of antibodies and complement results in the liberation of endotoxin which causes generalised symptoms such as fever. Some bacteria pass from the liver to the gall bladder and bile ducts and are secreted into the intestine where they establish a secondary infection and may cause diarrhoea. Bacterial excretion may occur for weeks and some persons may become chronic carriers.

Symptoms and Signs

The disease is characterised by a continued, high inflammation of the intestine, formation of intestinal ulcers, haemorrhage and enlargement of spleen can occur, Peyer's patches or flat patches of lymphatic tissue situated in the small intestine but mainly in the ileum are the seat of infection in typhoid fever. The patient may complain of diarrhoea or constipation and severe stomach ache. Abdominal absorption of nutrients is decreased and the patient may feel headache and anorexia.

Principles of Diet

A high calorie, high protein, high carbohydrate, low fat, high fluid, low fibre and bland diet is suggested for typhoid patients.

Dietary Suggestions

The general principles of dietary treatment of fever is followed for typhoid also.

At first clear fluid diet is given followed by full fluid and soft diet is suggested. On liquid diets the patient may not meet high calorie and high protein requirements. As the patient is improving soft diet can be given. The febrile period may upset water balance and liquid diets are helpful in meeting water and electrolyte requirements.

Foods to be included	Foods to be avoided
fruit juices with glucose, coconut water, barley water, milk, milk shakes if there is no diarrhoea, custards, thin dal, curries, eggs, baked fish, minces meat, curds, cottage cheese, cereals, gruels, steamed vegetable juices, milk puddings, vegetable puree	butter, ghee, vegetable oil, no irritating fibres foods, chillies and other spices, rich pastries, fried foods, puddings and cream soups

Because of the intestinal inflammation, great care must be exercised to eliminate all irritating fibres and spices in the diet. Refined cereals, bread, eggs, boiled potato simple desserts like custards, porridges can be given.

Adequate nutrition reduces convalescence period.

INFLUENZA

Influenza is an acute infection of short duration. It spreads from person to person by contact inhalation of virus. A sneeze or cough from an infected individual produces many droplets containing virus and these may be inhaled by those near by.

Symptoms

The incubation period is about 2 days with a range of 1–7 days. Onset is usually sudden consists of headache, lassitude, myalgia, shivering and fever. The patient usually has dry cough but there is frequently sneezing or sore throat. The illness is associated with pyrexia and lasts about 5 days. The patient may complain of lassitude and depression for one or two weeks. secondary but small rise in temperature may occur but if temperature remains elevated after fifth day then one of the pulmonary complications is likely. Bronchitis and pneumonia are most important and frequent complications of influenza.

Principles of Diet

General principles of dietary treatment is followed for influenza patient.

MALARIA

Four species of the genus plasmodium are responsible for human malaria. P. vivax, P. malariae P. ovale and P. falciparum.

Malaria is transmitted from human to human by the bite of infected female anopheles mosquitoes. Induced malaria occurs due to congenital transmission or transmission by blood transfusion.

Symptoms and Signs

Typical malarial attacks show sequentially over 4–6 hours. Shaking chills (the cold stage) fever (the hot stage) to 41°C or higher and the sweating stage.

Associated symptoms include fatigue, headache, dizziness, gastrointestinal symptoms (anorexia, nausea, slight diarrhoea, vomiting, abdominal cramps) myalgia, arthralgia, backache and dry cough.

Either from the onset or with progression of the disease, the attacks may show an every-other-day periodicity in vivax, ovale or falciparum malaria or an every-third-day (quartan) periodicity in malariae malaria. Splenomegaly usually appears when acute symptoms have continued for 4 or more days.

Principles of Diet

Dietary mangement is same as for fever.

TUBERCULOSIS

Tuberculosis is one of the leading causes of morbidity and mortality among the adult population in India. According to the Ministry of Health and Family Welfare (2006) two out of every five Indians are infected with TB bacillus. Of them 10 per cent develop TB disease during their life time.

Tuberculosis is an infectious disease caused by the bacillus Mycobacterium tuberculosis. It affects the lungs most often but may also be localised in other organs such as the lymphnodes, intestine, meninges, bones and joints, skin or it may be generalised.

Clinical Features

Pulmonary tuberculosis is accompanied by wasting of tissues, exhaustion, cough, expectoration (cough with respiratory secretions) and fever. The acute phase resembles pneumonia, with high fever and increased circulation and respiration. The chronic phase is accompanied by low-grade fever and though the metabolic rate is high, it is lower than in acute fever. Because of the protracted illness, wasting may be considerable.

As the disease progresses the patient begins to exhibit loss of appetite, pain in chest, fatigue, weight loss, night sweats and a persistent, worsening cough. If a blood vessel is eroded in the lungs, the sputum coughed up by the patient may become streaked with blood, also the tubercle bacilli may gain access to the blood and be transported to various parts of the body, establishing numerous secondary foci of infection. Death ultimately results when sufficient damage has occurred in the lungs or other vital organs. Lymphnodes and kidneys can also be affected. There is increased catabolism of tissue proteins and increased loss of water from body due to perspiration, increased loss of sodium chloride and potassium salt from body.

Treatment: Rifampicin, isoniazid, pyrazinamide and ethambutol are drugs used in combinations for treating tuberculosis. These drugs are supplied free to the patients through government hospitals and health centres. And monitored the progress under the Revised National TB Control Programme based on the Directly Observed Treatment Short Course (DOTS). The treatment lasts for a minimum period of nine months.

Modification of Nutrients

Energy: Since the metabolic rate is not as high as in other fevers, satisfactory weight can be maintained with 2500 to 3000 calories. It is not desirable to gain more than 10 per cent above the ideal weight for the body frame. High calorie diet is prescribed.

Protein: A protein intake somewhat in excess of normal requirements is necessary in tuberculosis, since the serum albumin value especially in advanced tuberculosis and in cases of long standing, may be low. The daily requirement may be from 80 to 120 g.

Minerals: The drug isoniazid interferes with vitamin D metabolism. This in turn can decrease absorption of calcium and phosphorus. Calcium, especially should be provided liberally since it is also essential for healing tuberculosis lesions. Atleast one litre of milk should be taken daily. The iron needs may also be increased if there has been haemorrhage. Calcium, iron and phosphorus help in regeneration of cells, blood and fluids.

Vitamins: The metabolism of vitamin A is adversely affected in tuberculosis. Carotene appears to be poorly converted to vitamin A so that the diet should be planned to provide vitamin A as such. The weekly inclusion of liver and dietary supplementation with vitamin A is essential.

Ascorbic acid deficiency is present and increased amounts of orange juice is prescribed. Vitamin C is essential for many regenerative purposes.

Isoniazid used as a chemotherapeutic agent for tuberculosis is an antimetabolite to pyridoxine, preventing the formation of pyridoxal phosphate. Pyridoxal phosphate functions as a coenzyme for transaminases that are required for the conversion of amino acids like glutamic acid. Glutamic acid being the only amino acid that the brain can metabolise, lack of pyridoxal phosphate depresses utilisation of glutamic acid and leads to the onset of neuritis. Treatment with large doses, 50 to 100 mg daily of pyridoxine prevents this effect.

Isoniazid also interferes with vitamin D metabolism. This in turn can decrease absorption of calcium and phosphorus. Hence supplementation of vitamins and minerals is required.

Principles of Diet

A high calorie, high protein, high vitamin and minerals and high fluid soft diet is recommended.

Dietary Management

- Since patients have poor appetite initially food must be appetising and patient's likes and dislikes must be considered.
- During the acute stage a high-calorie fluid and soft diet are prescribed.
- Initially small quantities of fluid diet should be given once in three hours. When the fever comes down the interval can be increased to every 4 hours.
- With medication patient improves. There will be no fever and cough but due to catabolic process the patient is emaciated. Hence, high calorie and high protein diet should be given. One litre of milk and 3 to 4 eggs per day are given.
- As the patient progresses, normal, attractive and palatable food should be given. The patient should come back to ideal weight. Rest, fresh air and good nutrition are the key elements for recovery from Tuberculosis.