MALNUTRITION

Malnutrition is defined as a pathological condition resulting from a relative or absolute deficiency or excess of one or more essential nutrients. This pathological condition is clinically manifested or detected only by biochemical, anthropometric or physiological tests.

Malnutrition occurs on four occasions. They are:

Undernutrition: Insufficient food or starvation leads to undernutrition.

Overnutrition: Excessive intake of food over a long period of time leads to overnutrition.

Imbalance: This is due to disproportion of nutrients in the diet.

Specific deficiency: This is a pathological condition resulting from the deficiency of one or other nutrient.

Kwashiorkor

It is a clinical syndrome produced by protein-calorie malnutrition. It is mainly due to protein deficiency. It is occuring among children during weaning and postweaning period. Highest incidence of this syndrome is found in children between 1 and 4 years. It is characterized by oedema, growth failure, muscle wasting, mental changes, hair changes, dermatosis, anaemia and hepatomegaly.

Causes:

* protein deficiency
* Premature termination of breast feeding
* use of over diluted cow milk.

Prevention :

* Antenatal, natal and postnatal care of mothers.
* Promotion of breast feeding.
* Measures to improve family diet.

Treatment :

* Development of programmes for early rehydrati -on of young children with diarrhoea.
* Deworming.
* Ampulatory treatment.

Marasmus

It is another clinical syndrome produced by Protein-calorie malnutrition. It is mainly due to deficiency of proteins and calories. It occurs in children. Marasmus ocurs twice or more as frequently as Kwashiorkor.

Symptoms :

* Growth retardation.
* Wasting of muscles
* Wasting of subcutaneous fat.
* The face is shrunken and it assumes 'monkey' face.

Obesity

Obesity is characterized by overweight and fatness. It is due to over eating and caloric abundance. It occurs in 10 to 15 percent of adolescent population. It commonly occurs in school children.

Overweight is the result of imbalance between

Calorie intake as food and calorie expenditure as energy. The intake of food will be higher, but the expenditure of energy will be lesser because of lesser physical work. The unspent calories become converted into fat and accumulated in the body as fat.

Prevention of obesity

Obesity can be prevented by the following methods:

* Calorie intake should be carefully limited and
* Proper exercises should be encouraged.

Anaemia

It is caused by the deficiency of iron, vitamin B_{12} and folic acid. It occurs in high frequency in pregnant and lactating women.

Epidemic Dropsy

Sometimes the mustard and other edible oils are contaminated with argemone oil. This mixing occurs naturally or willfully by the dealers. The argemone oil contains a toxic alkaloid called sanguinarine. This disease is charactorized by sudden bilateral swelling of legs, Diarrhoea, Dyspnoea, Cardiac failure, Death.

Deficiency Diseases

The deficiency diseases caused by vitamins or other diseases caused by malnutrition. Similarly abnormalities appear by the over doses of vitamins and minerals and the deficiency of minerals.

FEEDING

Feeding is the intake of food materials. Animals utilize different methods of feeding. Based on the feeding mechanism, animals are classified into 3 groups, namely Microphages, Macrophages, Liquid feeders.

Microphages

*Animals feeding on small food particles are called microphages. The mechanism of feeding small food particles is called microphagous feeding. Eg. Amoeba, Ciliates, Crustaceans, Bivalve molluscs, Amphioxus, Ascidians, etc.

*The microphages use a variety of structures such as Pseudopodia, cilia, tentacles, setae, muscles, mucous, etc. for food collection.

*When pseudopodia are used for food collection the feeding is called pseudopodial feeding. Eg. Amoeba.

*When cilia are used for food collection, the feeding is called ciliary feeding. Eg. Paramecium

*When tentacles are used for food collection, the mode of feeding is called tentacular feeding. Eg. Hydra, Obelia etc.

*When setae are used for food collection, the mode of feeding is called setose feeding. Eg. Crustaceans.

*If muscules are used for food collection, the feeding is called muscular feeding

*Some animals use mucous for food collection. It is called mucoid feeding. Eg. Amphioxus.

Macrophages

*Animals feeding on large food particles are called macrophages. The mechanism of feeding large food particles is called macrophagous feeding Eg. Amoeba,

Coelenterates, earthworm, Polychaetes, cephalopods, Vertebrates, etc.

*Some macrophages feed on the organic detritus present in the mud. They swallow large masses of mud and collect the organic materials present in the mud. Eg. Earthworm, Arenicola, Balanoglossus etc.

*Certain macrophages scrap the food materials with the help of radula in pila, Aristotle's lantern in sea urchin, etc.

*Teredo bores the wood with the help of the shell and eats the wood.

*Certain macrophages are provided with seizing organs. Eg. Jaws of Nereis, nematocysts of coelenterates, tentacles and arms in cephalopods, tube feet in Starfish, beaks in birds, fore limbs in vertebrates etc.

*Certain macrophages are provided with teeth for mastication.

Liquid feeders.

*Some animals feed on fluids and soft tissues. They are liquid feeders. Eg. Parasitic platyhelminth worms, nematodes, parasitic copepods, several insects, milk feeding young mammals etc.

*Certain liquid feeders have devices for piercing and sucking. Eg. Mosquito, leeches etc.

*Nematodes and trematodes suck the liquid food from the host.

*Taenia solium absorbs the food through the general body surface.

References

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