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**QUESTION**

1. What do you understand by primary obesity?
2. How does drug therapy and congenital syndrome affect secondary obesity?
3. Discuss the etiology of cancer and its molecular basis.

**ANSWER**

1. **Primary Obesity**

 Obesity means having too much accumulated fat in the body. It is a chronic medical disease that can lead to several other diseases and conditions like diabetes mellitus, high blood pressure, heart diseases, gallstones, etc. Several factors can cause obesity like altered nutritional behavior, genetic, hypothalamic or endocrine factors.

1. Drug Therapy:

 Lifestyle modification is the first and mainstay treatment for obesity. Antiobesity drugs are indicated as adjuncts to a healthy low-fat, low-calorie diet and exercise plan. Two drugs; Belviq and Qsymia have been approved, since June 2012, for the treatment of obesity. In addition to reducing body mass index, these drugs have been shown to reduce hemoglobin A1C levels in patient with diabetes and blood pressure levels in patients with hypertension, as well as to reduce lipid levels in patients with hyperlipidemia. They definitely provide enough benefits to manage the obesity pandemic, despite their common side effects.

Congenital Syndrome:

 The epidemic of obesity also affects children with congenital heart disease (CHD). Two main causes have been described: physical activity restrictions and interventions for weight gain in infancy, when many lesions cause under- nutrition. These interventions usually include consumption of increased calories and foods with high fat and sodium content. Although nutritional requirements and physical functional capacity change as these children grow older and their heart lesions are successfully treated, the inappropriate dietary behaviors and physical inactivity are usually maintained across childhood into adulthood. The family can also influence these unhealthy behaviors directly or indirectly, by setting an unhealthy model.

**3.**

**Cancer**

 The term cancer was derived from a Latin word ‘cancrum’ or Greek ‘karkinoma’, which mean ‘crab’. The disease is called so because the swollen veins around the area resemble a crab’s limbs.

**Etiology of Cancer**

 All cancer cells are multifactorial in origin. They include genetic, hormonal, metabolic, physical, clinical and environmental factors. Most human cancers are spontaneous.

Mutagens:

 These increase the rate of mutation. They can lead to the development of cancer cells. All mutagens are carcinogens (cancer causing agents). Examples are x-rays, gamma rays, etc.

Aflatoxins:

 They are a group of chemically related compounds synthesized by the fungi, *Aspergillus flavus*. The mold grows on rice, heat and groundnut, when left damp. Aflatoxins are powerful carcinogens which cause hepatomas.

Cigarette:

 Lung cancer is associated with cigarette smoking. Cigarette contains many carcinogens. Oral cancer is strongly associated with tobacco chewing. Alcohol intake increases the risk of oral, pharyngeal, esophageal and liver cancer. Diet high in fat and cholesterol increases the risk of colon, breast and prostate cancers.

**Molecular basis of cancer**

 All cancers usually occur from one aberrant cell, which usually goes on to multiply and produce a tumor mass. One cell occurs out of every 106 cell divisions. By the time the person becomes an adult, 1026 cell divisions have occurred. Thanks to the surveillance of the immune system, the aberrant call is usually destroyed. As one ages, however, the amount of mutations accumulate, and so the chances of cancer cell developing increases.