1.WHAT DO YOU UNDERSTAND BY PRIMARY OR SIMPLE OBESITY?

Simple obesity is characterized by a normal or increased growth rate with an acceleration of bone age maturation. When longitudinal growth slows down in the presence of obesity, a hormonal disturbance should be sought. Despite normal growth, simple obesity is characterized by a reduced GH secretion evaluated by standard provocative tests, the administration of GH-releasing hormone or spontaneous 24-hour secretion. In obese children GH secretion may be as low as in poorly growing children with classical GH deficiency. The endocrine abnormalities along the GH axis seem to involve complex mechanisms at the hypothalamic, pituitary and peripheral level. Recent data suggest that simple obesity is associated with an increase in GH clearance and a decrease in GH synthesis and secretion. It is also associated with high insulin and insulin-like growth factor I levels which may interfere in the complex endocrine interactions. In conclusion, simple obesity is characterized by normal growth in the presence of ‘hyposomatotropism’.

2. HOW DOES CONGENITAL SYNDROME AND DRUG THERAPY AFFECTS OBESITY

The cardiovascular complications associated with excess weight include arterial hypertension (HTN), dyslipidaemia, insulin resistance, glucose intolerance, type 2 diabetes, left ventricular hypertrophy and pulmonary hypertension secondary to sleep apnoea. In the past, it was believed that these complications occurred exclusively in adulthood, but evidence has emerged that they may develop in childhood, with some authors demonstrating an association between childhood obesity and early development of myocardial changes and coronary and thyroid disease in the paediatric age group.

The negative impact of obesity can be greater in children with congenital heart disease (CHD), as these patients have underlying myocardial abnormalities on which the cardiovascular risk factors associated to obesity can be superimposed.At present, there are few data on the prevalence of overweigh and obesity in children with CHD, and it has only been recently that a growing concern about obesity in this group has become widespread, as recent studies have demonstrated that the prevalence in this population is high and similar to the prevalence in the general population.

Pharmacotherapy is a second step in the treatment of obesity, approved only when weight loss targets were not reached through lifestyle intervention. During the history of antiobesity drugs, many of them were withdrawn because of their side effects. Various guidelines recommend prescribing drug therapy for obesity through consideration of the potential benefits and limitations. Orlistat deactivates intestinal lipase and inhibits intestinal fat lipolysis. It is actually the only drug on the European market approved for the treatment of obesity. Orlistat therapy reduces weight to a modest extent, but it reduces the incidence of diabetes beyond the result achieved with lifestyle changes. Recently, some effective antiobesity drugs like sibutramine and rimonabant have been removed from the market due to their side effects. The new combination of topimarate and fentermine is approved in the US but not in Europe. The cost effectiveness of long-term pharmacotherapy of obesity is still an unresolved question.

3. OUTLINE THE AETIOLOGY OF CANCER AND ITS MOLECULAR BASIS.

Cancer is a disease caused by genetic changes leading to uncontrolled cell growth and tumor formation. The basic cause of sporadic (non-familial) cancers is DNA damage[citation needed] and genomic instability.] A minority of cancers are due to inherited genetic mutations. Most cancers are related to environmental, lifestyle, or behavioral exposures. Cancer is generally not contagious in humans, though it can be caused by oncoviruses and cancer bacteria. The term "environmental", as used by cancer researchers, refers to everything outside the body that interacts with humans. The environment is not limited to the biophysical environment (e.g. exposure to factors such as air pollution or sunlight), but also includes lifestyle and behavioral factors.

Molecular basis of cancer

Discussion of the causes of cancers necessarily involves an examination of the molecular machinery in cells that guides the basic processes of proliferation (increase in cell number by cell division), differentiation (cell specialization into different tissue types), and apoptosis (programmed cell death). Those processes are guided by two innate programs in cells, the genetic code and the epigenetic code. In cancer each of those codes ultimately becomes altered regardless of whether the disease originated with an external or internal factor. Indeed, a fundamental characteristic of a tumour cell is that it begets a tumour cell. In other words, cancer, once manifest, becomes an inherited disease of the cell and is therefore self-perpetuating. The hereditary nature of cancer at the cellular level explains why alterations have been found in both the genetic and the epigenetic codes in tumour cells. The number of alterations seen in the coded programs increases as tumours progress to more advanced stages. Their existence and accumulation also explain why principles of evolutionary theory provide insights of practical significance for cancer biology.

Oncogenes and tumor suppressors and the mutations that affect them are different beasts from the point of view of the cancer gene hunter. But from a cancer cell's point of view they are two sides of the same target. The same kinds of effects on cell behavior can result from mutations in either class of genes, because most of the control mechanisms in the cell involve both inhibitory (tumor suppressor) and stimulatory (proto-oncogene) components. In terms of function, the important distinction is not the distinction between a tumor suppressor and a proto-oncogene, but between genes lying in different biochemical and regulatory pathways.

Some of the pathways important in cancer carry signals from a cell's environment others are responsible for the cell's internal programs, such as those that control the cell cycle or cell death still others govern the cell's movements and mechanical interactions with its neighbors.The various pathways are linked and interdependent in complex ways.