INTRODUCTION

Hypertension is defined as sustained increase of systolic and diastolic blood pressure above the normal range for age ,sex and weight regardless of the primary causes accepted upper limits for ABP. Infants 70/45,early child hood 85/55, adolescents 100/75, adult 140/90 ***(Wongprasartsuk, 2003).***

Classification

Several factors are taken into account in classifying an hypertensive condition: the evolution of the disease, the magnitude of the increase in blood pressure values, the etiology of the hypertensive state, and the absolute level of the total cardiovascular risk profile. The total risk profile appears to be the most comprehensive because, as suggested by the European Guidelines ***(Seedat. et al., 2002).***

A. Classification of Hypertension According to Disease Evolution

The evolution of the hypertensive state allows classification of blood pressure elevation as two forms: malignant hypertension and benign hypertension.

1. Malignant Hypertension

Malignant hypertension, which was first described as a separate disease entity about 90 years ago by Volhard and Fahr, is characterized by a very high blood pressure elevation (usually .200/120 mmHg) that is most often associated with an increase in plasma creatinine levels, renal dysfunction and failure, left ventricular hypertrophy, microangiopathic hemolytic anemia, and neurological manifestations of hypertensive encephalopathy ***(Seedat. et al., 2002).***

The incidence of new cases of accelerated hypertension has decreased drastically in the past few years, primarily because earlier diagnosis and treatment of the disease prevents blood pressure increases in the vast majority of cases, as well as preventing the clinical manifestations and complications of such an elevation in pressure. The prognosis of malignant hypertension also has improved in the past few years because of the availability of new and effective antihypertensive compounds and the availability of renal dialysis and kidney transplantation ***(Seedat. et al., 2002).***

2. Benign Hypertension

Benign hypertension is a frequently encountered clinical condition that includes hypertensive states in which the magnitude of the blood pressure increase is less marked than the increases that characterize malignant hypertension ***(Dasgupta. et al., 2007).***

Benign hypertension also includes hypertensive states in which there is no evidence of cardiac, renal, or cardiovascular organ damage and no symptoms that are related to an elevation in blood pressure values. The clinical evolution of the latter type of hypertension is usually slower than the evolution of accelerated hypertension, and the long-term prognosis is more benign ***(Innes. et al., 1993).***

B. Classification of Hypertension According to Blood Pressure Levels

In a comprehensive classification of the hypertensive state that is based on the magnitude of the blood pressure increase, such as that provided in the 2003 Guidelines of the European Society of Hypertension/European Society of Cardiology, one point should be stressed, namely that classification of hypertension according to blood

pressure values is no longer based solely on the diastolic component, but also on the systolic blood component. This is in response to clinical evidence that systolic blood pressure values appear to predict the incidence of cardiovascular disease in several conditions more readily than those of diastolic blood pressure ***(Mancia .et al ., 2002).***

C. Classification According to Etiology of Hypertension

1) Essential hypertension

It is the more common type and affects 90-95% of hypertensive patients, and even though there are no direct causes, there are many risk factors such as sedentary lifestyle, obesity, salt (sodium) sensitivity, alcohol intake, and vitamin D deficiency. It is also related to aging and to some inherited genetic mutations ***(Harrison. et al., 2008).***

Family history increases the risk of developing hypertension. Renin elevation is another risk factor ***(Harrison. et al., 2008).***

Also sympathetic overactivity is implicated. Insulin resistance which is a component of syndrome X, or the metabolic syndrome is also thought to cause hypertension. Recently low birth weight has been questioned as a risk factor for adult essential hypertension ***(Dodt .et al., 2009).***

Secondary hypertension

On the other hand, secondary hypertension by definition results from an identifiable cause. This type is important to recognize since its treated differently than essential type by treating the underlying cause.

Many secondary causes can cause hypertension, some are common and well recognized secondary causes such as Cushing's

syndrome, which is a condition where both adrenal glands can overproduce the hormone cortisol. Hypertension results from the interplay of several pathophysiological mechanisms regulating plasma volume, peripheral vascular resistance and cardiac output, all of which may be increased. More than 80% of patients with Cushing's syndrome have hypertension. Another important cause is the congenital abnormality coarctation of the aorta ***(Giacchetti. et al., 2009).***

Adrenal

A variety of adrenal cortical abnormalities can cause hypertension, in primary aldosteronism there is a clear relationship between the aldosterone - induced sodium retention and the hypertension ***(Bailey M . et al., 2008).***

Kidney

Other well known causes include diseases of the kidney. This includes diseases such as polycystic kidney disease which is a cystic genetic disorder of the kidneys, PKD is characterized by the presence of multiple cysts (hence, "polycystic") in both kidneys, can also damage the liver, pancreas, and rarely, the heart and brain ***(Gross P., 2008).***

Medications

Certain medications, especially NSAIDs (Motrin/Ibuprofen) and steroids can cause hypertension. High blood pressure that is associated with the sudden withdrawal of various antihypertensive medications is called Rebound Hypertension. The increases in blood pressure may result in blood pressures greater than when the medication was initiated. Depending on the

severity of the increase in blood pressure, rebound hypertension may result in a hypertensive emergency ***(Kang and Struben. , 2008).***

Pregnancy

Few women of childbearing age have high blood pressure, up to 11% develop hypertension of pregnancy. ***(Marik, 2009).***

While generally benign, it may herald three complications of pregnancy: pre-eclampsia, HELLP syndrome and eclampsia. Follow-up and control with medication is therefore often necessary. ***(Pack and Gislason., 2009).***

Anesthesia and Hypertension

Anesthesia has a great effect on the hypertension so that the main target is to ensure circulatory stability during surgery. All antihypertensive drugs should be taken preoperatively to assist in blood pressure control during surgery and recovery. Many drugs used in the treatment of hypertension are vasodilators or cardiac depressants. Since anaesthetic agents also have these actions, the effects on the circulation may be more noticeable. ***(Fleisher, 2002).***

At induction Care should be taken not to cause a precipitous fall in arterial pressure at induction. The use of opioids, such as morphine or fentanyl, will reduce the amount of induction agent required. Thiopentone may be used provided it is given slowly, and titrated against response. Ketamine, which raises the arterial pressure and heart rate, is best avoided.

If tracheal intubation is necessary, the hypertensive response to laryngoscopy can be reduced by the use of intravenous opioids, lignocaine

1mg/kg intravenously, and an adequate depth of anesthesia. ***(Fleisher, 2002).***

Maintenance: the use of opioids, which have minimal cardiovascular effects, will reduce the amount of volatile agents required. High concentrations of volatile agents can cause hypotension by decreasing the systemic vascular resistance and by depressing the myocardium. Nitrous oxide can be safely used. Local anaesthetic nerve blocks or infiltration are useful either on their own or to supplement general anesthesia. ***(Aronson, 2002)***

Anesthetic management of hypertensive patient needs special care in all stages .pre, intra and postoperatively. Special anesthic agents and techniques, drug interaction, intra operative and postoperative complications have to be taken in consideration. Emergent surgery for a hypertensive patient needs a special car also ***(Aronson, 2002).***

In this essay types , causes , diagnosis and treatment of hypertension will discussed , as well as, preoperative preparation , intra operative precautions and management ,and postoperative treatment of the hypertensive patient .