The anesthesiologist frequently encounters patients with hypertension. The difficult decision for the anesthesiologist is - is it really important or should we proceed without further information. Elevation in blood pressure results in a dose-dependent increase in morbidity and mortality. This elevation in blood pressure has broad implications for the anesthesiologist because it denotes potential underlying structural and functional changes in various organs of the body. Those alterations result in a diminished "margin of safety" for that organ. The main organs affected by hypertension are the heart, the brain and the kidney. (1) Since the perioperative period results in significant changes induced by anesthesia and surgery, it is not surprising that dysfunction of one of these organs occurs more frequently in the hypertensive patient than in the normotensive patient. Systemic arterial hypertension by definition is a blood pressure greater than 160/95. More recently, studies have examined the consequences of borderline hypertension (140/90 - 160/95) and have found these patients will also develop complications of high blood pressure. It is now established that the severity of the hypertension and the length of time hypertension is present without drug therapy result in an increased incidence of myocardial infarction, stroke or renal dysfunction. This discussion will examine some of the factors involved in hypertension, some of the therapies aimed at the treatment of
hypertension and recommendations for the anesthetic management of these patients.

Systemic hypertension may be divided into two broad categories: primary or essential hypertension and secondary hypertension. Secondary hypertension includes hypertension due to identifiable factors such as primary aldosteronism, stenosis of the renal artery resulting in renovascular disease, parenchymal disease such as nephrosclerosis, and pheochromocytoma.

Secondary Hypertension

Secondary hypertension comprises about 10% of all hypertension. Specific treatment of the underlying condition results in a complete cure of the hypertension in most cases. While these patients represent only a small percentage of all hypertensives, an understanding of their basic pathophysiology may be helpful in the diagnosis and treatment of patients with essential hypertension.

Primary Aldosteronism

Primary aldosteronism is a condition in which an adenoma in the adrenal gland produces excess amounts of aldosterone. Aldosterone is a potent steroid which results in sodium retention and subsequent potassium excretion by the kidney. With increased sodium retention, effective blood volume is increased and blood pressure becomes elevated. The patient presents with hypertension, hypokalemia, low plasma renin activity and metabolic alkalosis. Removal of the adenoma results in a cure of the hypertension.

Renal Artery Stenosis

If one or both renal arteries become stenotic, hypertension may result. In younger individuals, the stenosis is due to fibromuscular thickening of the renal artery, while in older patients, it is due to