

## **1. Introduction**

### **1.1. Hypertension**

Hypertension is a global health problem, (Lopez A, *et al.*. 2006), it is defined as either a sustained systolic blood pressure (sbp) of greater than 140mm Hg or a sustained diastolic blood pressure (dbp) of greater than 90mm Hg. Hypertension results from increased peripheral vascular smooth muscle tone, (Human Hypertension advance online publication, 2010), which leads to increased arteriolar resistance and reduced capacitance of the venous system. In most cases, the cause of the increased vascular tone is unknown. Elevated blood pressure is an extremely common disorder affecting approximately 15% of the population of the united state (60million people). Although many of these individuals have no symptoms, chronic hypertension—either systolic or diastolic—can lead to cerebrovascular accidents (strokes), congestive heart failure, myocardial infarction, and renal damage. The incidence of morbidity and mortality significantly decreases when hypertension is diagnosed early and is properly treated (American Heart Association Heart And Stroke Statistics update, 2005). In recognition of the progressive nature of hypertension, the sixth report of the joint national committee classifies hypertension into categories for the purpose of treatment management. (Seventh report of the joint National committee on Detection, Evaluation and Treatment of High Blood Pressure 2003), The diagnosis of hypertension is made when the average of 2 or more diastolic BP measurements on at least 2 subsequent visits is  $\geq 90$  mm Hg or when the average of multiple systolic BP readings on 2 or more subsequent visits is consistently  $\geq 140$  mm Hg. Isolated systolic hypertension is defined as systolic BP  $\geq 140$  mm Hg and diastolic BP  $< 90$  mm Hg. (Table 1) Individuals with high normal BP tend to maintain pressures that are above average for the general population and are at greater risk for development of