Discussion
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This study had the majority of patients in the more than 40 years age group (64 out of total 70 patients). The increasing incidence of hypertension with age is well established. Carnani – Hurtley et al, noted a 5% increase for each 10 years interval of age from the baseline. The high incidence in persons aged over 50 years probably represents a considerable proportion of cases of systolic hypertension. The number of male subjects were slightly were slightly higher in this study (41 vs. 29). In studies quoted, the percentage of males was always higher at all ages. Hence, it is evident that the age and sex wise distribution seen in this group of 70 patients was similar to those observed in other studies.

In this study, it was observed that 43% of the patients (30 out of 70) were diagnosed as having grade I hypertension, and 57% of the patients (40 out of 70) were diagnosed as having grade II hypertension. Other workers, in hypertension detection and follow-up programme noted the highest incidence of stage I hypertension. Probably, the difference is because, that study was a community based study, while the current study is one that is hospital based. Moreover, only those patients who had developed some complications, or were symptomatic were attending the hospital.

About 50% of patients required a reduction of 20 – 39 mm Hg systolic, and 10 – 19 mm Hg diastolic blood pressure.
The most common effect of hypertension on heart, is hypertrophy of left ventricle. Whereas, LVH is identified by ECG in only 5 – 10% of patients, LVH is found in about half of untreated hypertensives by echocardiography (Gonav et al, 1992). In the current study on ECG criteria, 12% of the patients had hypertrophy.

Hypertension remains quantitatively the largest risk factor for coronary artery disease. In the present study, as many as 43 subjects, out of 70, had incidence of ischemic heart disease and myocardial infarction, when clinical history and ECG changes were considered together.

These rates are much higher than those reported in community based studies. Probably, this shows that only those hypertensives with morbidity are attending the hypertension clinic.

Hypercholesterolemia and hypertriglyceridemia impair endothelium dependent relaxation. The vascular endothelium, is increasingly being recognized for its hormonal functions as well as its regulation of vascular tone, growth and remodeling. Decreased lipoprotein lipase activity is common in individuals with hypertension and insulin resistance. As a result, the decreased conversion of cholesterol ester enriched very low density lipoprotein (VLDL) to LDL results in an increase in large and ab(N) esters, which in turn is injurious to endothelial cells. Several well documented epidemiologic studies have demonstrated that cholesterol levels are significantly higher in hypertensive patients, than in age, sex an BMI matched normotensive patients. In our study, it is evident that 8 subjects out of 70, had values higher than 240 mg%, which were in the abnormal range. 42 subjects
out of 70, were in the borderline group. These data indicates significant incidence of hypercholesterolemia in these patients.

Serum triglyceride (STG) levels in this study shows that, 22 out of 70 patients had triglyceride levels in higher range, while 27 out of 70 patients had triglyceride levels in borderline range.

Higher blood pressure alters the lipid metabolism, in such a way to result in hypercholesteroma, and low levels of HDL cholesterol. In our study, 29 out of 70 patients had HDL cholesterol levels below 40 mg / dl. Only 5 patients had HDL cholesterol above 60 mg / dl.

Serum LDL cholesterol was higher than 160 mg / dl in 15 subjects out of 70, while it was borderline in 26 subjects. Studies using coronary events as the end point of treatment, for hypertensive patients, have shown that treatment of high blood pressure alone or hypercholesterolemia alone, produces only modest results. Only when both problems are controlled, there is a marked reduction in coronary artery disease.

On reflection of the current data, and taking into consideration current recommendations of National Cholesterol Education Programme (NCEP) expert panel on detection, evaluation and treatment of high blood pressure in adults, Adult Treatment Panel III (ATP III), we find that about half of these patients, attending the hypertension clinic, require dietary notification followed up by therapeutic intervention.

When we consider blood urea levels, 17 patients out of 70 had blood urea levels greater than 50 mg / dl, i.e. having renal failure out of which 8 patients had already undergone haemodialysis, went on to have hemodialysis or were on conservative treatment for chronic renal failure. The renal
usual clinical testing. The loss of renal function, grows progressively as the BP increases and the elevations continues. About 10 – 40% patients of hypertension die of renal failure (Kaplan et al, 1983).

Hypertension remains a leading risk factor for END stage renal disease. 7 patients out of 70 in this group, had proteinuria. Any degree of proteinuria poses a risk of death (Daamgord et al, 1990). The serum creatinine was greater than 1.5 mg % in 17 patients. All of these patients had renal failure. Otherwise, the majority of serum creatinine values were between 0.5 to 1.5 mg %.

Diabetes mellitus and hypertension co-exist, more commonly than predicted by chance, perhaps 3 times more commonly (Kaplan et al, 1999). The connection between hypertension, diabetes and obesity is strong, especially for those who have predominantly abdominal obesity. These factors comprise the major components of insulin resistance syndrome (Metabolic syndrome). The study had 8 cases of diabetes, who had a fasting blood glucose > 126 mg%. Diabetic nephropathy is now second only to coronary disease, as a cause of death among diabetic hypertensives.

When we consider complications, coronary artery disease was most common (43 subjects out of 70), in which MI was seen in 16 subjects and IHD was seen in 27 patients. This was followed by retinopathy, which was seen in 42 of 70 patients, out of which grade I changes were seen in 13 patients, grade II changes in 19 patients, grade III changes in 6 patients and grade
IV changes in 4 patients. Renal failure was present in 2 patients and CVA in 6 patients.

In this group of patients, the number of those with BMI > 25 was 16 subjects. Even in the absence of Type II diabetes, obesity is one of the major acquired factor responsible for hypertension. Two factors must be considered in examining the risks of obesity related hypertension. First, the distribution of the obesity, with a significantly greater cardiovascular risk among those, whose obesity is predominantly abdominal type. Second, factors that are responsible for leanness, such as smoking and alcohol abuse, which independent of the hypertension, increases the risks of the lean (Stamler et al, 1991).

Chest pain was the commonest symptom present in 34 out of 70 subjects. Headache was the second most common symptom reported by the subjects (30 out of 70). This value is between the 17% (incidence of headache in previously undiagnosed hypertensives) and 71% (incidence of headache in diagnosed hypertensives). Some authors (Kaplan, 1993) have discussed the interesting hypothesis, that many symptoms described by hypertensives are secondary to anxiety, over having the ‘silent killer’, as hypertension is frequently described. Anxiety that is often expressed as recurrent acute hyperventilation episodes. Many of the symptoms described by hypertensives, such as band like headache, dizziness, light headedness, fatigue, palpitations, a common problem among all the patients. Headache is usually present upon awakening, is felt in the back of the head, may or may not be throbbing in character, and often lasts only a few hours, even without analgesic therapy. It is interesting to note the observation that sleep apnoea is more
Morning headaches may reflect not hypertension but nocturnal hypoxia.

Oedema, which is a definite physical sign, with no functional correlation, was present in 6 patients, all from amongst those who went into cardiac or renal failure.