Discussion
DISCUSSION

The present study was conducted in the department of medicine, M.L.B. Medical College, Jhansi. The subjects were taken from the diabetes OPD, Hypertensive OPD, Medicine General OPD and those who were admitted to wards. The study included 20 patients with type 2 diabetes and 20 patients with essential hypertension detected within 3 months. The study was conducted from Sept 2004 to Oct 2005.

Newly Diagnosed Diabetics:

Of the 20 patients studied, 11 were males and 9 were females (table I). Maximum number of patients (30%) were in the 40-49 year age group followed by 20% each in the 50-59 age group and 60-69 group (table II). 15% patients were less than 30 years of age.

In this study, 77.77% females had their HDL-C < 50 and 100% males had their HDL-C < 40 (Table III and IV). So in both groups, HDL-C levels were lower. This is consistent with as observed by Garg et al and Stern MP et al and Uvsitupa et al.
Table V shows that nearly 85% of the patients had their LDL-C levels in the range of 100-130 mg% (according ATP-3 guideline values were between optimal to near optimal) Only 15% patients had value > 130 mg% This is consistent with AM Wagner et al study in which 75% had normocholesterolemia

Table VI shows that 70% of patients had their cholesterol levels < 200 mg% only 30% had their total cholesterol levels > 200 mg%

The finding were in accordance with that of Stern MP et al and diabetic control and Complications Trial Research and AM Wagner et al, as they also noted that there was no change in STC levels in diabetes mellitus. But this finding contradicts the findings of Garg et al who found that there was an increase in STC levels in diabetes mellitus

Table VII shows that only 10% patients had their triglyceride levels below 150 and 50% patients had their triglyceride levels in the range of 150-199 mg% calling for therapeutic life style changes and nearly 40% patients had their TG levels more than 200mg% which required initiation of drug therapy. This finding seems to be consistent with fact that diabetes causes raised triglyceride levels.
Krahulec B et al found hypertriglyceridemia in 66% patients. The finding was also in accordance with Muusitupa et al study as they found that the serum total cholesterol levels in diabetic and non-diabetic subjects were similar, but the HDL-C levels were lower and serum triglyceride levels higher in the diabetic than in non-diabetic subjects.

Table VIII shows that 60% patients had their VLDL-C values < 40 and 40% had their values < 40, this shows that their was not any significant change in VLDL-C values in diabetic subjects.

Table IX shows that 95% patients had their Apolipoprotein A1 level less than desirable level of 115 mg%. The finding was in accordance with study carried out by Goran Wallidus et al.

Table X shows that 35% patients had their apolipoprotein B levels below desirable level an 65% had their values in desirable range. No one had higher values. This finding contradict the finding of AM Wagner et al who found hyper apo-B in almost half of the normocholesterolemic type 2 diabetic patients.

Table XI shows that 75% patients had their Lp(a) values below normal (< 30 mg%) and only 25% had their values above normal (> 30 mg%). Out of five patients who had raised Lp(a)
levels, three patients had myocardial infarction and one had stroke. This finding is consistent with V Mohan et al study that Lp(a) levels were significantly higher in diabetic patients with CAD compared with diabetic patients without CAD. This finding is also consistent with SM Haffner study that Lp(a) concentrations in diabetics are not elevated.

**Newly Diagnosed Hypertensive:**

Of the 20 patients studied, 12 were males and 8 were females (Table I). Maximum number of patients (35%) were 40-49 years age group followed by 30% in the 50-59 group (Table II), followed by 25% in the 60-70 group. Only 2 patients were below 30 years.

Table III shows that 60% patients had their serum total cholesterol value above 200 and 40% had below 200. This is consistent with several well conducted studies that have demonstrated that cholesterol levels are significantly higher in hypertensive patients.

Table IV shows that 45% patients had their triglyceride levels in range of 150-199 and 45% had in range of 200-499. So nearly 90% patients had their triglyceride levels >150 mg%. This
consistent with studies that hypertriglyceridemia commonly present in hypertensive patients.

Table V shows that more than 90% hypertensive males had their HDL-C >40 mg%

Table VI shows that nearly 75% hypertensive females had their HDL-C levels below 50 mg% This shows that HDL-C values are more deranged in females than males in hypertensive patients.

Table VIII shows that hypertensive patients had significantly lower values of Apo-A1. But Apo-B values (Table IX) were normal in nearly 100% patients.

There was also not any significant derangement in Lp(a) (Table X) values in hypertensive patients.

Several well conducted epidemiological studies have demonstrated that cholesterol levels are significantly higher in hypertensive patients than in Age, Sex and Body mass index match normotensive patients. Our study also indicate significant incidence of hypercholesterolemia in these patients. The association of high blood pressure and dyslipidemia is so common that many have argues that the high blood pressure it self may play a role in altering lipid metabolism in such that to result in
hypercholesterolemia, hypertriglyceridemia and low levels of HDL cholesterol. But recent data suggest that high blood pressure and dyslipidemia are independent variables that present clinically at different times.

Although hyperlipidemia and high blood pressure are independently important risk factors, the likelihood of coronary events appears to be increased when the two problems occur together. Regardless of the cause of accelerated atherosclerosis in patients with concomitant lipid and blood pressure abnormalities, there are important therapeutic implications. Studies using coronary events as the end point of treatment for hypertensive patients have shown that treatment of high blood pressure alone or dyslipidemia alone produces only modest results. Only when both problems are controlled is there a marked reduction in coronary events.