INTRODUCTION

Diabetes mellitus type 2 is a heterogeneous condition characterized by presence of both impaired insulin secretion and insulin resistance. It has unfortunately reached epidemic proportion now-a-days. Diabetes mellitus type 2 is a leading cause of death and disability in both developed and developing countries. A study conducted in 2000 and reported that worldwide Diabetes mellitus type 2 estimated prevalence of 2.8% will rise to 4.4% by 2030. In Pakistan there are 5.2 million cases in the year of 2000 and it is estimated to be 13.9 million in 2030.

Diabetic mellitus is independent risk factor for vascular disease, abnormalities in insulin and glucose do not seems to account entirely for high frequency of microvascular or macrovascular disease in patients with Diabetes mellitus type 2. In UK prospective Diabetic study (UKPDS) the typical lipid pattern in the population with DM compared with non DM showed a pattern of hypertiglyceridemia, low HDL-C, relatively unaltered total cholesterol and an increase LDL-C.

Atherogenic Dyslipidemia also known as Diabetic dyslipidemia is characterized by elevated very-low-density lipoprotein (VLDL), small dense LDL particle
and low high density lipoprotein (HDL) cholesterol. Increased concentration of LDL cholesterol may be more pathogenic. In patients with Diabetes mellitus type 2 than in non DM, because of presence of small dense low density lipoprotein cholesterol particle oxidation glycated LDL-C. It was found that prevalence of dyslipidemia in DM subject has high risk of total cholesterol 56.6, triglyceride 23.6, LDL-C 77.1 and HDL-C 48.9% respectively. HDL has protective role against artherosclerosis because of its role in reverse cholesterol transport, metabolism of TG and lipoprotein. Since it is reservoir of apoprotien C-2 which is the activator of lipoprotein lipase the enzyme responsible for the metabolism of chylomicron and VLDL in peripheral tissue. Diabetic related changes in plasma lipid level are among the key factors that are amenable to intervention.

MATERIAL AND METHODS
This study consisted of seventy patients was carried out in General Medicine department of Peoples Medical University & Hospital Nawabshah and Civil hospital Karachi from June 2011 to July 2012. Detailed History was taken from all the patients with special regard to increased thirst and frequent urination, increased hunger, weight loss, fatigue, blurred vision, slow-healing sores or frequent infections and areas of darkened skin. All patients underwent for base line and specific investigations especially fasting blood sugar and fasting lipid profile. Inclusion criteria were that all patients after counseling for study and taking written consent were included in this study > 35 years of age with either sex admitted in general medicine ward through outpatient department and diagnosed as case of DM type 2 on the basis of history, clinical examination and investigations. Exclusion criteria included patients on dialysis, patients on lipid lowering agents, patients with acute complication of diabetes mellitus such as diabetic keto-acidosis, patients suffering from hypothyroidism, nephritict syndrome, type 1 DM and HTN, lactic acidosis and hypoglycemia.

RESULTS
Out of 70 patients included in this study 46 were men (65.8%) and 24 patients were female (34.2%); with male to female ratio of 1.9:1. There was wide variation of age ranging from a minimum of 35 year to 75 year. The mean age was 48.65 ± 7.8 years. Patient's lipid profile mean total serum cholesterol was 196.04 ± 44.02 mg/dl, mean serum triglycerides was 193.04 ± 108.64 mg/dl, mean high density lipoprotein 29.28 ± 8.48 mg/dl, mean low density lipoprotein 125.24 ± 39.68 mg/dl and mean very low density lipoprotein was 31.28 ± 8.48 mg/dl (Table-I).

Pattern of dyslipidemias in gender. Total cholesterol was abnormal (>200 mg/dl) in 56 (80%) patients out of 70 [21 (87.5%) were females and 35 (76.1%) were males]. Triglycerides was abnormal (>150 mg/dl) in 62 (88.5%) patients [22 (91.66%) were females and 40 (86.95%) were males], high density lipoprotein was abnormal (<35 mg/dl) in 51 (72.8%) patients [18 (75%) were females and 33 (71.73%) were males], LDL was abnormal (>130 mg/dl) in 40 (57.1%) patients [17 (70.83%) were females and 23 (50%) were males] and VLDL was abnormal (>30 mg/dl) in 47 (67.14%) patients [19 (79.16%) were females and 28 (60.86%) were males] (Table-II).

<table>
<thead>
<tr>
<th>Lipid profile</th>
<th>Mean ± SD</th>
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<tbody>
<tr>
<td>S-Cholesterol</td>
<td>196.04 ± 44.02 mg/dl</td>
</tr>
<tr>
<td>S-Triglycerides</td>
<td>193.04 ± 108.64 mg/dl</td>
</tr>
<tr>
<td>HDL-Cholesterol</td>
<td>29.28 ± 8.48 mg/dl</td>
</tr>
<tr>
<td>LDL-Cholesterol</td>
<td>125.24 ± 39.68 mg/dl</td>
</tr>
<tr>
<td>VLDL-Cholesterol</td>
<td>31.28 ± 8.48 mg/dl</td>
</tr>
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Table-I. Lipid profile

DISCUSSION
Worldwide large number of people affect type 2 diabetes mellitus and its prevalence is increasing...
quickly. In Pakistan; 6.9 million people are suffering from diabetes, with the International Diabetes Federation estimating that this number will grow to 11.5 million by 2025. In 2007, 246 million people worldwide suffered from diabetes making the disease one of the most common non communicable global diseases and the 4th leading cause of death in the world. In diabetic patients mainly women, increased cardiovascular mortality has been observed. Epidemiological data reported that 70% of patients with type 2 diabetes will die of some form of cardiovascular problems.

In our study overall male patients were more dyslipidemic as compared to female. Out of 70 patients 46 were men (65.8%) and 24 patients were female (34.2%); with male to female ratio of 1.9:1. However in the study of Jali MV reported the prevalence of dyslipidemia was higher among males (58.6%) compared to females (41.4%). However the male to female ratio given by Ogbe PJ was 1.6:1.

The age ranged from 35 to 75 years with mean age of 48.65 ± 7.8 years. The peak age group in our study were 4th and 5th decade of life which is comparable to other study where peak incidence was in the 5th decade of life and also reported prevalence of dyslipidemia increases as the age advances among males. The prevalence was 80% among > 50 years which was significantly higher compared to other age groups.

In our study the lipid profile, mean total serum cholesterol was 196.04 ± 44.02 mg/dl, mean serum triglycerides was 193.04 ± 108.64 mg/dl, mean high density lipoprotein 29.28 ± 8.48 mg/dl, mean low density lipoprotein 125.24 ± 39.68 mg/dl and mean very low density lipoprotein was 31.28 ± 8.48 mg/dl. This is also favored by other local and international studies.

Pattern of dyslipidemias are due to resistance to insulin and hyperglycemia which are decreased high density lipoprotein and elevated triglycerides. In the study of Shera A was observed that uncontrolled diabetes will lead to higher vascular (macro and micro) complications and was related to longer duration of diabetes, poor control, increased weight and high blood pressure. The vascular complications were ischemic heart disease, myocardial infarction and cerebrovascular accident. In our study revealed that pattern of dyslipidemias were total cholesterol abnormal (>200 mg/dl) in 56 (80%) patients out of 70, triglycerides abnormal (>150 mg/dl) in 62 (88.5%) patients, high density lipoprotein abnormal (<35 mg/dl) in 51 (72.8%) patients, LDL abnormal (>...
130 mg/dl) in 40(57.1%) patients and VLDL abnormal (> 30 mg/dl) in 47(67.14%) patients. While in study of Jali MV reported the prevalence of isolated hypercholesterolaemia; males (63.4%), females (36.6%), isolated hypertriglyceridaemia; males (58.9%), females (41.1%), isolated high LDL; males (56.7%), females (43.3%) and isolated low HDL; males (52.7%), females (47.3%) was found. Prevalence of fasting isolated abnormal lipid parameters was significantly higher among males with diabetes.

In our study observed the evidence for the presence of high prevalence of dyslipidemia in type 2 diabetic patients. Although our patients received oral hypoglycemic agents for hyperglycemia and in some cases were treated with lipid lowering agents, a significant proportion of them had abnormal lipid profile. The most frequent was hypertriglyceridemia 62(88.5%) patients and frequent was elevated total cholesterol 56(80%) patients.

Fontbonne et al. in a prospective cohort study showed that elevated plasma levels of TG in diabetic patients was positively and significantly correlated with CAD events and CAD mortality. Hypertriglyceridemia may be the best lipid predictor of CVD in type 2 diabetic patients. Recent studies have demonstrated that in diabetic patients TG levels is a risk factor for CVD independent of HDL-C level and despite glycemic control.

CONCLUSIONS
Dyslipidemia is common among type 2 diabetic patients. Males are more prone to suffer from this complication. Patterns of dyslipidemia found more commonly were decreased HDL levels, increased LDL and Triglycerides levels. This problems need attention and take efforts for screening, treatment and life style modification would facilitate in decreased complications, CVD morbidity and mortality in type 2 diabetes dyslipidemic pattern patients.

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Amena Rahim, Amir Shahzad, PIOGLITAZONE VS DLIMEPIRIDE; TO EVALUATE THE EFFECT OF ON RENAL FUNCTION TESTS IN TYPE 2 DIABETES IN PATIENTS (Original) Prof Med Jour 18(3) 450-453 Jul, Aug, Sep 2011.

Syed Shahjee Husain, Muhammad Rizwan Javed, Sara Ahmad Ali. **DIABETIC KETOACIDOSIS; THE PRECIPITATING ENTITIES IN PATIENTS WITH TYPE 2 DIABETES MELLITUS** (Original) Prof Med Jour 18(1) 82-82 Jan, Feb, Mar 2011.