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PHARMACEUTICAL SCIENCES**<http://doi.org/10.5281/zenodo.398809>Available online at: <http://www.iajps.com>**Research Article****DYSLIPIDEMIA IN PATIENTS WITH ESSENTIAL  
HYPERTENSION****Dr. Mashooq Ali Dasti<sup>\*1</sup>, Dr. Syed Fasih Ahmed Hashmi<sup>1</sup>, Dr. Syed Zulfikar Ali Shah<sup>2</sup>,  
Dr. Hamid Nawaz Ali Memon<sup>3</sup>, Dr. Zulfikar Ali Qutrio Baloch<sup>4</sup> and Dr. Imran Karim<sup>2</sup>**<sup>1</sup>Department of Cardiology, Liaquat University of Medical and Health Sciences (LUMHS)  
Jamshoro.<sup>2</sup>Department of Medicine, Liaquat University Hospital Hyderabad / Jamshoro.<sup>3</sup>Zulekha Hospital, Dubai United Arab Emirates.<sup>4</sup>Brandon Regional Hospital, Brandon, Florida.**Received:** 27 February 2016**Accepted:** 08 March 2017**Published:** 14 March 2017**Abstract:****OBJECTIVE:** To determine the frequency of dyslipidemia in patients with essential hypertension.**PATIENTS AND METHODS:** The descriptive case series study was conducted from July 2015 to December 2015 on the hypertensive individual. The inclusion criteria of the study were the patients of  $\geq 30$  years of age; either gender had history of essential hypertension (known cases) for more than 3 years duration. All the individuals were assessed for dyslipidemia after at least 14 hours fasting. The frequency / percentages (%) and means  $\pm$ SD computed for study variables.**RESULTS:** Total one hundred hypertensive individuals were recruited and study for dyslipidemia. The mean  $\pm$ SD for age, systolic and diastolic blood pressure was  $53.98 \pm 5.87$ ,  $150.87 \pm 7.65$  and  $100.72 \pm 5.85$ . The frequency of dyslipidemia was 48 (68.5%) with male gender predominant (75%) along with urban population (65%). The mean  $\pm$ SD for Triglycerides (mg/dl), Total cholesterol (mg/dl), High density lipoprotein (mg/dl), Low density lipoprotein (mg/dl) and Very low density lipoprotein (mg/dl) was  $230 \pm 10.76$ ,  $265 \pm 12.87$ ,  $27.76 \pm 2.98$ ,  $160.72 \pm 13.85$  and  $40.98 \pm 9.53$  while the serum triglyceride and cholesterol was observed to be raised in 12.5% and 12.5% and LDL 14.5% whereas the mix dyslipidemia was observed in 41.6%.**CONCLUSION:** The correlation of dyslipidaemia and essential hypertension should be properly evaluated and treated to save the patients from long term chronic complications associated with hypertension and hyperlipidemia.**Keywords:** Hypertension, Lipid profile and Dyslipidemia.**Corresponding Author:****Dr. Mashooq Ali Dasti,**

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**INTRODUCTION:**

Hypertension is a major health trouble and the cause of mortality worldwide and the lower socio economic community faces peak incidence for hypertension due to improper treatment[1,2]. In Pakistan, awareness of hypertension and related complication is very poor, although the educational strategies in other countries have effective role to reduce the burden of the disease[3]. In our daily practice we observed many individuals of different age group to diagnose as hypertension for the first time and sometimes presents with complications related to hypertension[4]. Thus, evaluating hypertension at initial age and sorting associated complications with appropriate treatment will not only increase life expectancy but also prevent to acquire the complications[5]. Hypertension is also associated with coronary heart disease and former literature had identified risk factors related to coronary heart diseases includes diabetes mellitus, dyslipidemia, weight gain (obesity), diet and sedentary life style[6,7]. Among all the kidney impairment is the major complication in subjects with chronic severe hypertension[8-10]. Lipid disorders like hypertriglyceridemia, hypercholesterolemia, and low density lipoprotein have impact in the etio-pathogenesis of hypertension associated with coronary arterial diseases and along with metabolic syndrome is a cluster of health trouble that needs immediate effective measure[11-13]. Therefore this study was conducted on hypertensive individuals to evaluate their lipid profile to detect the frequency and pattern of dyslipidemia as early treatment can save the patient to acquire the life threatening complications associated with hypertension and hyperlipidemia.

**PATIENTS AND METHODS:**

The descriptive case series study was conducted from July 2015 to December 2015 on the hypertensive individual. The inclusion criteria of the study were the patients of  $\geq 30$  years of age; either gender had history of essential hypertension (known cases) for more than 3 years duration while the exclusion criteria of the study were the patients with secondary hypertension, malignancy, pregnant ladies, and connective tissue disorders, already on corticosteroids or anti-hypertensive regimen and non cooperative individuals. After taking informed consent, the detail history was taken and relevant clinical examination was performed. The routine and specific investigations (if necessary) were advised while to evaluate the dyslipidemia the patients were advised for at least 14 hours fasting and then blood sample was drawn and sent to laboratory for biochemical analysis. The data was recorded on pre-designed proforma while analyzed in SPSS 16. The frequency and percentages of categorical variables was calculated while for numerical variables the mean  $\pm$ SD was used.

**RESULTS:**

Total one hundred hypertensive individuals were recruited and study for dyslipidemia. The mean  $\pm$ SD for age, systolic and diastolic blood pressure was  $53.98 \pm 5.87$ ,  $150.87 \pm 7.65$  and  $100.72 \pm 5.85$ . The frequency of dyslipidemia was 48 (68.5%) with male gender predominant (75%) along with urban population (65%). The results are given in Table 1-2.

Table 1: The Demographical, Clinical and Biochemical Profile of the Population

AGE (yrs)	Frequency (N=70)		Percentages (%)
30-39	08		11.4
40-49	20		28.5
50-59	30		42.8
60+	12		17.1
<b>GENDER</b>			
Male	50		71.4
Female	20		28.5
<b>DYSLIPIDEMIA</b>			
Yes	48		68.5
	Male	Female	
	36 (75%)	12 (25%)	
No	22		31.4
<b>BLOOD PRESSURE</b>			
Systolic	150.87±7.65		
Diastolic	100.72±5.85		
<b>MEAN ±SD OF LIPID PROFILE</b>			
Triglycerides (mg/dl)	230±10.76		
Total cholesterol (mg/dl)	265±12.87		
High density lipoprotein (mg/dl)	27.76±2.98		
Low density lipoprotein (mg/dl)	160.72±13.85		
Very low density lipoprotein (mg/dl)	40.98±9.53		

Table 2: The Frequency and Pattern of Dyslipidemia

PARAMETER	FREQUENCY (N=48)	PERCENTAGES (%)
↑TG	06	12.5
↑Cholesterol	06	12.5
↑LDL	07	14.5
↑VLDL	04	8.3
↓HDL	05	10.4
Mix dyslipidemia	20	41.6

**DISCUSSION:**

Dyslipidaemia in hypertension is due to lipid accumulation within the lumen of vessels leads to atherosclerosis and increases the resistance for blood flow in vascular system causing hypertension[14,15]. In present study the dyslipidemia was observed in 48(68.5%) individuals with male gender 36(75%). Majority of the population had mix dyslipidemia 20(28.5%), followed by ↑TG (12.5%) and ↑cholesterol (12.5%) and ↓HDL 5 (10.4%) respectively. The observations were also reported previously by several studies [16-18]. The HDL-cholesterol impairs endothelium dependent dilation

and is a protective protein which shown to be decrease in dyslipidemic hypertensive population suggesting more risk to acquire complications of hyperlipidemia. With chronic persistent hyperlipidemia the target organ damage is also ensues. In present study the HDL was found to be reduce in 10.4% population, the findings are consistent with former literature [19,20]. The low density lipoprotein is a vasoconstrictor proinflammatory, mitogenic, and thrombogenic protein, usually called as bad protein / culprit. Thus it's raise in hypertensive individuals increase the risk

to acquire complications of hypertension and hyperlipidemia [21,22].

In present study the LDL was raised in 7(14.5%) patients and it is consistent with the former study. In present series, the ↑TG and ↑cholesterol was observed in 12.5% and 12.5% hypertensive subjects. The finding was also reported previously by Onat A, et al and Eaton CB, et al. [23, 24] Hypertension is a degenerative disorder that not only increases purine metabolism and uric acid level but also affecting the blood vessels supplying various organs of the body and damage to these main organs is known as target organ damage [25]. The complication of hypertension as Heart failure has more endothelial dysfunction due to dyslipidaemia so in every hypertensive individual dyslipidaemia should be evaluated and corrected because early detection will prevent complications of hypertension and hyperlipidemia.

### CONCLUSION:

Hypercholesterolemia, hypertriglyceridemia, low HDL and raised LDL and VLDL are seen in patients with essential hypertension. Thus correlation of dyslipidaemia and essential hypertension should be properly evaluated and treated to save the patients from long term chronic complications associated with hypertension and hyperlipidemia.

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