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Research Article

**DEMOGRAPHICAL EVALUATION OF HYPERTENSION IN  
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Zulfiqar Ali Qutrio Baloch<sup>4</sup>**<sup>1</sup> Department of Medicine, Liaquat University of Medical and Health Sciences (LUMHS)  
Jamshoro<sup>2</sup> General Practitioner Zulekha Hospital Dubai United Arab Emirates<sup>3</sup> St. Francis Medical Center, Trenton, New Jersey<sup>4</sup> Brandon Regional Hospital, Brandon, Florida, U.S.A**Abstract:****Objective:** To study the demographical evaluation of hypertension in young individuals at tertiary care hospital Hyderabad.**Patients and Methods:** The cross sectional descriptive study of one year was conducted at tertiary care hospital Hyderabad. All the patients of, 12-40 years of age, either gender have history of hypertension or diagnosed as case of hypertension according to criteria of JNC VIII guidelines were enrolled and evaluate for the existent suspicious factor responsible for hypertension. The frequency and percentages was calculated while the mean  $\pm$ SD was computed for numerical variables.**Results:** During one year study period total, total fifty young patients were studied for hypertension and its cause. The mean  $\pm$ SD of age for whole population was  $34.82 \pm 7.73$  while the mean  $\pm$ SD for systolic and diastolic blood pressure was  $160.32 \pm 8.93$  and  $100.53 \pm 9.95$  respectively. The family history was existence in 15 (30%), smoking and alcoholism in 20(40%) and 12 (24%). The common symptoms observed were headache 40 (80%), dyspnoea 35 (70%) and visual disturbance 30 (60%) while the identified common factors responsible for hypertension were essential hypertension 22 (44%), chronic glomerulonephritis 8(16%) and diabetic nephropathy 7(14%) with male gender predominance 30(60%).**Conclusion:** The hypertension is prevalent in young population and in present study the essential hypertension occupied 22 (44%) while the common causes detected for secondary hypertension were chronic glomerulonephritis 8(16%) and diabetic nephropathy 7(14%)**Keywords:** Hypertension, essential hypertension, secondary hypertension**Corresponding author:****Dr. Suhail Ahmed Almani,**

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**INTRODUCTION:**

The concept of hypertension existed since centuries, Sir Henry Platt first given the idea of secondary hypertension since then further exploration has been continued to look for a cause of hypertension. [1] The advancement in modern surgery techniques has been successfully able to sort the etiological factor of hypertension in individuals with curable cause. [2] This idea motivate and aware the clinician to look for a secondary cause of hypertension especially in young subjects. [3] Hypertension is one of the most common disorders affecting the peoples worldwide. Due to associated mortality and morbidity and the cost for society, it is a common public health burden. [4] Over the past several years, advance research, huge patient education, and the collaborative efforts on health care professionals the decrease in morbidity and mortality rates due to multiple organ damage and untreated hypertension is observed. [5] Hypertension is the most important modifiable risk factor for coronary and cerebrovascular disease, congestive cardiac failure, chronic renal failure and peripheral vascular disease. [6] Therefore, health care providers not only detect and treat the patients with hypertension but also educate for healthy lifestyle and preventive modalities to decrease the burden of hypertension from the general population. [7, 8] Along with proper history and clinical examination, there should be consideration of complete relevant investigations should be explored fully to reach the exact causative factor of hypertension in young patients.

Therefore this study was planned to be conducted on the young individuals presented with hypertension at tertiary care hospital as major effective measures should be taken to detect the cause with intensive efforts and investigations to treat the specific case

and prevent the patients to acquire life threatening complications associated with hypertension.

**PATIENTS AND METHODS:**

The cross sectional descriptive study of one year was conducted at tertiary care hospital Hyderabad. All the patients of, 12-40 years of age, either gender have history of hypertension or diagnosed as case of hypertension according to criteria of JNC VIII guidelines were enrolled and entered in the study while the exclusion criteria of the study were hypertensive individuals <12yrs and >40 years of age, drug induced hypertension, pregnant and lactating ladies. The consent was taken from every relevant patient while the complete medical history was taken, clinical examination was performed and baseline investigations were advised whereas for the specific suspicious disease the investigational workup was performed accordingly as blood complete picture, serum electrolytes, serum urea and creatinine, urine analysis, electrocardiography, chest radiograph, ultrasound, echocardiography, 24 hours urinary protein, overnight dexamethasone suppression test or 24 hour urine cortisol and creatinine, angiography and auto-antibodies profile for specific disease. The data was collected on pre-designed proforma while analyzed in SPSS version 16. The frequency and percentage was calculated while for numerical variables the mean  $\pm$ SD was calculated.

**RESULTS:**

During one year study period total, total fifty young patients were studied for hypertension and its cause. The mean  $\pm$ SD of age for whole population was  $34.82 \pm 7.73$  while the mean  $\pm$ SD for systolic and diastolic blood pressure was  $160.32 \pm 8.93$  and  $100.53 \pm 9.95$  respectively. The results of the study are presented in Table 1-4.

**Table 1: The Demographical and Clinical Profile of Study Population**

<b>AGE (yrs)</b>	<b>FREQUENCY (N=50)</b>	<b>PERCENTAGES (%)</b>
12-20	14	28
21-29	15	30
30-40	21	42
<b>GENDER</b>		
Male	30	60
Female	20	40
<b>FAMILY HISTORY OF HYPERTENSION:</b>		
Yes	15	30
No	35	70
<b>RISK FACTORS DETECTED</b>		
Smoking	20	40
Alcohol	12	24
Dyslipidemia	10	20
Obesity	15	30
<b>RESIDENCE</b>		
Urban	32	64
Rural	18	36
<b>CLINICAL FEATURES:</b>		
Headache	40	80
Convulsion	12	24
Hemiparesis	05	10
Visual disturbance	30	60
Dyspnoea	35	70
Palpitation	28	56
Chest pain	22	44
Sweating and flushing	02	04
Haematuria	06	12
Epistaxis	04	08
Asymptomatic	09	18

**Table 2: The Age and Gender Distribution**

<b>AGE (yrs)</b>	<b>GENDER</b>		<b>Total</b>
	<b>Male</b>	<b>Female</b>	
12-20	8	6	14
	26.7%	30.0%	28.0%
21-29	5	10	15
	16.7%	50.0%	30.0%
30-40	17	4	21
	56.7%	20.0%	42.0%
Total	30	20	50
	100.0%	100.0%	100.0%

**Table 3: The Age Distribution in Relation to Etiology**

ETIOLOGY	AGE (yrs)			Total
	12-20	21-29	30-40	
Essential Hypertension	8	3	11	22
	57.1%	20.0%	52.4%	44.0%
Chronic glomerulonephritis	2	3	3	8
	14.3%	20.0%	14.3%	16.0%
Chronic pyelonephritis	1	1	3	5
	7.1%	6.7%	14.3%	10.0%
Polycystic kidney disease	1	1	0	2
	7.1%	6.7%	.0%	4.0%
Cushing`s disease	2	1	1	4
	14.3%	6.7%	4.8%	8.0%
Takayasu`s arteritis	0	1	0	1
	.0%	6.7%	.0%	2.0%
SLE with Lupus nephritis	0	0	1	1
	.0%	.0%	4.8%	2.0%
Diabetic nephropathy	0	5	2	7
	.0%	33.3%	9.5%	14.0%
Total	14	15	21	50
	100.0%	100.0%	100.0%	100.0%

**Table 4: The Gender Distribution in Relation to Etiology**

ETIOLOGY	GENDER		Total
	Male	Female	
Essential Hypertension	17	5	22
	56.7%	25.0%	44.0%
Chronic glomerulonephritis	5	3	8
	16.7%	15.0%	16.0%
Chronic pyelonephritis	3	2	5
	10.0%	10.0%	10.0%
Polycystic kidney disease	1	1	2
	3.3%	5.0%	4.0%
Cushing`s disease	2	2	4
	6.7%	10.0%	8.0%
Takayasu`s arteritis	0	1	1
	.0%	5.0%	2.0%
SLE with Lupus nephritis	0	1	1
	.0%	5.0%	2.0%
Diabetic nephropathy	2	5	7
	6.7%	25.0%	14.0%
Total	30	20	50
	100.0%	100.0%	100.0%

**DISCUSSION:**

Patients with hypertension have some pathophysiology that elevates the blood pressure and useful to think either having essential HT i.e. systemic hypertension due to unknown etiology (primary hypertension) or secondary hypertension results from an underlying etiology and often correctable cause. [9] The identification of etiological factor is important since the underlying cause in some cases be remedied by surgical intervention despite of prolonged drug therapy which in certain cases not well tolerated. [10] Considering the high incidence of hypertension needs treatment in general population, the study of hypertensive individuals with objective to explore the specific etiological factors should be considered on priority basis. [11, 12] In present study fifty patients in the age group of 12-40yrs had hypertension, of which 30 males and 20 females. Headache was the commonest clinical presentation observed in our study followed by shortness of breath (dyspnea), vision disturbance, palpitations and chest pain, this is in accordance with the former studies. [13, 14] Study conducted by Singh SP, et al shown that headache, dyspnoea and edema were common clinical features. [15] Secondary hypertension accounted for 28 (56%) cases and is consistent with the study by Panja M, et al [16] and Viera AJ, et al [17] although essential hypertension also constituted 22 (44%) in present study and is consistent with the study by Raj M. [18] Platt R, reported in a study of young hypertensive subjects prevalence of secondary hypertension to be 70% below the age of 35 years. [19]

In present study the chronic pyelonephritis was detected in 5 (10%) patients by ultrasound and IVP shown contracted lobulated kidney due to cortical scarring and calyceal changes and urine culture and sensitivity yielded bacterial growth (E coli) in these patients, it is consistent with the study by Butler AM. [20] In current series 2(4%) patient had PCKD and 7(14%) patient with diabetes mellitus developed hypertension, 24 hr urinary protein was raised showing evidence of diabetic nephropathy and is consistent with the former literature. [21, 22] In present study, the Cushing's syndrome occupied 4 (8%) while the chronic glomerulonephritis was identified in 8(16%) individuals and are also consistent with the previous studies. [23, 24] In present series, the SLE was detected in 1(2%) patients as the cause of hypertension in young population and such finding is again reported in the study by Ryan MJ, et al. [25] The takaysu's arteritis was detected in 1(2%) % of patients and the observation is in accordance with the study by Fieldston E, et al [26] and Pohjola-Sintonen S, et al [27]. The examination of young hypertensive

individual with a view to detect any specific etiology is important and it has been suggested that complete medical history, extensive examinations should be performed and specific investigations should be advised in every young patients of hypertension requiring treatment. However, such efforts should also be reasonably related to the available possibilities and should also emphasize that treating hypertension can save the young individuals to acquire life threatening complications associated with hypertension.

**CONCLUSION:**

The hypertension is prevalent in young population and in present study the essential hypertension occupied 22 (44%) while the common cause detected for secondary hypertension were chronic glomerulonephritis 8(16%), diabetic nephropathy 7(14%) and chronic pyelonephritis 5(10%) with male population predominance 30(60%).

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