



## HEADACHE; PRIMARY VERSUS SECONDARY AND RELATIONSHIP WITH AGE, GENDER, HYPERTENSION, DIABETES AND OBESITY IN LUMHS HYDERABAD

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**ABSTRACT... Objective and aims:** To determine relationship of age, gender, hypertension, diabetes mellitus and obesity with primary and secondary headache in a tertiary care hospital. **Study design:** A cross-sectional study. **Place and duration of study:** Medical OPD of Liaquat University of Medical and Health Sciences, Hyderabad from 10 January to 10 July 2015. **Methodology:** Patients (male and female) with complaint of headache in medical OPD were included in this study. Patients with acute emergency, stroke, meningitis, encephalitis and severe infection were excluded. After taking informed consent, history, examination and laboratory test (like fasting blood glucose, blood urea nitrogen) were sent. Data was recorded in a proforma. Data was entered and analyzed using SPSS version 20. **Results:** A total of 100 patients of headache were included in this study. The mean age of enrolled participants was  $33.6 \pm 2$  years. Forty percent were male and 60% female with male to female ratio was 0.7:1. Eighty nine percent of patients have normal blood pressure, 82% normal blood sugar and 48% normal body mass index. Eighty six percent patients had primary and 14% had secondary headaches. Normal blood pressure was observed in 93% cases of primary headache compared to 64.3% in secondary headache ( $p=0.006$ ). Normal blood sugar was observed in 14% cases of primary headache compared to 42.9% in secondary headache ( $p=0.018$ ). Normal body mass index was observed in 51.2% cases of primary headache compared to 28.6% in secondary headache ( $p=0.002$ ). **Conclusion:** There is strong relationship of primary headache with age, gender, obesity but not associated with hypertension and diabetes mellitus. Hypertension and diabetes are more strongly related with secondary headache

**Key words:** Primary headache, out-patient department, age, gender.

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### INTRODUCTION

Headache is common ailments in our society, especially male or female and young comes in medical outpatient department with complaints of headache.<sup>1</sup> Sometime it is very difficult to junior doctor to differentiate it from primary to secondary headache. Many non-specialist healthcare professionals can find the diagnosis of headache difficult and both people with headache and their healthcare professionals can be concerned about possible serious underlying causes.<sup>2</sup> It is serious problem in emergency when any patients come in sudden onset headache with vomiting and CT scan shows sub arachnoids hemorrhages, so early confirmation, reduce mortality and morbidity and increased survival of patients.<sup>3</sup> This leads

to variability in care and may mean that people with headaches are not always offered the most appropriate treatments. People with headache are unlikely to have a serious underlying disease.<sup>4</sup> Comparisons between people with headache referred to secondary care and those treated in primary care show that they do not differ in terms of headache impact or disability. Many people with headache do not have an accurate diagnosis of headache type.<sup>4</sup> GP lack confidence in their ability to diagnose common headache disorders. They can feel under pressure to refer people for specialist opinion and investigation. Most common headache types can be diagnosed on clinical history and can be managed in primary care.<sup>5</sup> Socrates defines nature of pain in scalp region, to severity, onset,

character, associated factors, aggravating factors, and relieving factors. If specialist advice is needed on headache diagnosis and management this can be provided by a neurologist with an interest in headache or a GP with a special interest in headaches, or for young people under 18 years of age; a general hospital or community based pediatricians or pediatric neurologist.<sup>6</sup> Within this guideline the term specialist is used to mean either a neurologist. Primary headache caused episodic, severe headache with aura or without aura presentation. Aura are usually visual changes lasting from minute to an hours, then follows with photophobia and phonophobia.<sup>7</sup> Migraine that occurs more than 15 days per month at least 4 hours per day is consider chronic migraine. Why is it that those who have migraines just a few days per month often slowly progress to a chronic pattern? There are a number of possible reasons for this increase, some that can be changed and others that cannot.<sup>8</sup> Using acute pain medicine is too frequently is a common reason for transformation to daily headache, but others include too much caffeine, snoring, and sleep apnea, thyroid disorders, head trauma, stress, depression, and anxiety, but for the purposes of this toolbox, we will be looking at obesity as a risk for chronic migraine normal weight people with migraine hereabout a 3% chance of developing chronic headaches in a year. If they are overweight, they have 3 times that chance.

## METHODOLOGY

This cross sectional study was conducted in the Medical OPD of Liaquat University of Medical and Health Sciences, Hyderabad from 10 January to 10 July 2015. Patients (male and female) with complaint of headache in medical OPD were included in this study. Patients with acute emergency, stroke, meningitis, encephalitis and severe infection were excluded. After taking informed consent, history, examination and laboratory test (like fasting blood glucose, blood urea nitrogen) were sent. Data was recorded in a proforma.

Data was entered and analyzed using SPSS version 20. The mean and SD was calculated for

age. Frequency and percentages were calculated for gender, hypertension, diabetes mellitus and obesity. Box plot was constructed for age. Comparison of type of headache was done by age, gender, hypertension, diabetes mellitus and obesity. Chi square test was applied by taking p-value of < 0.05 statistically significant.

## RESULTS

A total of 100 patients of headache were included in this study. The mean age of enrolled participants was  $33.6 \pm 2$  years. Thirty percent patients were below 25 years of age. Forty percent were male and 60% female with male to female ratio was 0.7:1. Eighty nine percent of patients have normal blood pressure, 82% normal blood sugar and 48% normal body mass index. Eighty six percent patients had primary and 14% had secondary headaches.

Comparison between primary and secondary headache by age (figure 1), gender, hypertension, diabetes and obesity was summarized in table 1. Normal blood pressure was observed in 93% cases of primary headache compared to 64.3% in secondary headache ( $p=0.006$ ). Normal blood sugar was observed in 14% cases of primary headache compared to 42.9% in secondary headache ( $p=0.018$ ). Normal body mass index was observed in 51.2% cases of primary headache compared to 28.6% in secondary headache ( $p=0.002$ ).

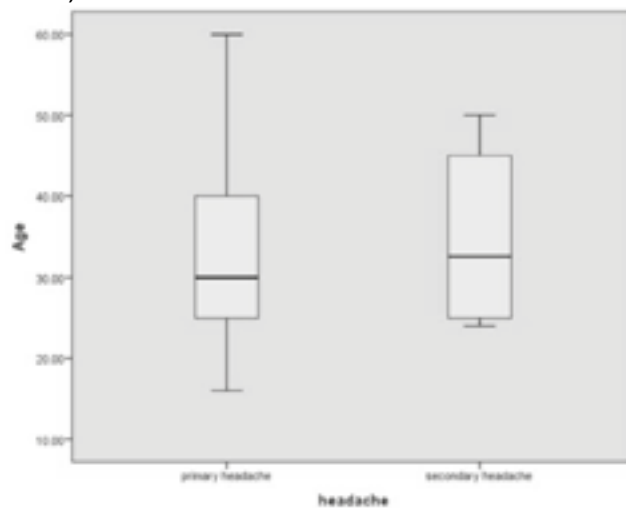


Figure-1. Age distribution among patients of primary and secondary headaches

		Headache		P-value
		Primary headache	Secondary headache	
Age	<25 years	26	4	0.642
		30.2%	28.6%	
	25-30 years	22	3	
		25.6%	21.4%	
	31-40 years	20	2	
		23.3%	14.3%	
>40 years	18	5		
	20.9%	35.7%		
Gender	Male	33	7	0.295
		38.4%	50.0%	
	Female	53	7	
		61.6%	50.0%	
Hypertension	Normal	80	9	0.006
		93.0%	64.3%	
	Grade 1 BP	4	3	
		4.7%	21.4%	
	Grade 2 BP	2	2	
		2.3%	14.3%	
Diabetes mellitus	Yes	12	6	0.018
		14.0%	42.9%	
Obesity	Normal	44	4	0.002
		51.2%	28.6%	
	Over weight	34	5	
		39.5%	35.7%	
	Obese	8	3	
		9.3%	21.4%	
	Morbid obesity	0	2	
		0.0%	14.3%	

**Table-I. Comparison of primary and secondary headache by age, gender, hypertension, diabetes and obesity**

## DISCUSSION

Headache at least once within a year, with the most recent prevalence estimates coming from GBD 2010 for migraine (14.7%) and (20.1%).<sup>12</sup> No reliable global estimate is yet available for pmoh, because so few studies have been conducted and case-ascertainment is difficult, but a recent review found that estimates clustered around 1–1.5% while all headache on  $\geq 15$  days/month may affect 3% of adults.<sup>13</sup> Comparisons with epidemiological studies elsewhere, using the same methods and questionnaire, put the prevalence estimate for migraine in Zambia towards the upper end of the range of these studies (India 25.2% [unpublished],

Russia 20.8%, china 9.3%) and within the range for (India 35.1% [unpublished], Russia 30.8%, china 10.8% ).<sup>14-18</sup> Therefore our zambian data are in contradiction of previous studies in ssa (surveying less representative populations) which reported substantially lower estimates for both migraine (3.3% in rural benin ) and tth (7% in northern Tanzania. Primary headache is at least as common in zambia as in the rest of the world, which carries a very important public-health message for this country and probably the entire region.<sup>19-20</sup>

Migraine that occurs more than 15 days per

month at least 4 hours per day is considered chronic migraine. Why is it that those who have migraines just a few days per month often slowly progress to a chronic pattern? There are a number of possible reasons for this increase, some that can be changed, and others that cannot. Using acute pain medication several studies have reported a different prevalence of headache types, which might be due to different methodologies used, as well as cultural and population characteristics of the studied patients. In a study of 418 patients with headache, found a prevalence of 39.9% for primary headaches. As expected, neuralgia had the highest prevalence.<sup>21</sup>

In middle age (40-49) and the peak prevalence of cluster headache was 30-39 years. According to our results, more than 75% of our patients had primary headaches, with migraine (with and without aura) being the most common type at 41.6% followed by the diagnosed in 34.1%. Consistent with our findings, in a retrospective study in Pakistan, showed migraine headache as the most common type, with a prevalence of 81% in our population. My study determines 86% of patients have primary headache (migraine) with normal blood pressure (normal BP 88%) and 13% have secondary headache mostly caused by hypertension (BP 10%), 1% pts is missing from study (table I) and bar chart 1. Out of 100 patients BMI (body mass index) were found 48% have normal, 39% have over weight and 11% have obesity and 2% have morbid obesity.<sup>22</sup> Caffeine is too frequently a common reason for transformation to daily headache, but others include too much caffeine, snoring, and sleep apnea, thyroid disorders, head trauma, stress, depression, and anxiety, but for the purposes of this toolbox, we will be looking at obesity as a risk for chronic migraine. Normal weight people with migraine hereabout a 3% chance of developing chronic headaches in a year. If they are overweight, they have 3 times that chance.<sup>23</sup>

## CONCLUSION

There is strong relationship of primary headache with age, gender, obesity but not associated with hypertension and diabetes mellitus. Hypertension

and diabetes are more strongly related with secondary headache.

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### AUTHORSHIP AND CONTRIBUTION DECLARATION

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