A Study Clinical Profile Of Headaches In A Tertiary Care Hospital

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Abstract

Introduction: Headache is the most common complaint encountered by a physician in his day-to-day practice. According to different population based studies more than 70% of people throughout the world experience one headache per year during their lifetime. Primary headaches are those in which headache and its associated features are the disorders itself whereas secondary headaches are those caused by exogenous disorders.

Aim Of The Study: To rural surrounding to know the clinical and demographic profile of patients with chronic headache.

Materials & Methods: one thousand and seven patients All Patients attending headache clinic admitted/referred to the Neurology Department, Govt. Stanley Medical College and Hospital in the year 2016 were inculded in the study. Patients with headache are enrolled in the headache registry, proforma is filled then headache patients are instructed to maintain a dairy and instructed to approach Neurology department anytime. We followed up for a period of two years and the records are computerised.

Results : The study subjects were divided into two groups based on type of headache. They are primary 896 (89%) and secondary 111 (11%). females are affected more than males about 82% which is comparable with an American study where migraine is 2 to 3 times common in females. In the primary headaches, 74% of TTH and 100% of cluster headache showed non-consanguinity.In the secondary headaches all showed non-consanguinity.It indicates that there is association between the type of headache and the consanguinity. In primary headaches, 17% of migraine, 16% of TTH showed family history and there was no family history in cluster headache.Migraine was more common in families which correlates with a population based study which shows risk of migraine in first degree relatives is 1.5- 4 fold.TTH was more in no family history in our study probable attributed to the same socio economic and stress factors.In secondary headache, there was no family history in all typesit indicates that there is association between the type of headache and the Family History. In primary headaches, Migraine: 32% was bilateral and 31% was unilateral. TTH: 42% was bilaterally affected. Cluster headache: 10% was unilateral and 25% was bilateral. In secondary headaches: 33% of SOL, 38% of NCC, all Tuberculoma and 21% ICT was globally affected.it indicates that there is association between the type of headache and the Affected Site. In primary headaches-Migraine headache was throbbing in 75% patients and dull in 19% of patients.TTH was throbbing in 65% of patients and dull in 19% of patients.Cluster headache was throbbing in 70% of patients.Throbbing headache was maximally seen in migraine headache.In Secondary headaches, 100 % of Sol, 68% of NCC, 60% of ICT headache was throbbing and it was dull headache in Tuberculoma. In primary headaches, 57% of migraine, 54% of TTH and 100% of Cluster headache have visual blurring as warning signal.In Secondary headaches, All of Sol, All of NCC headache and 60% ICT are having Visual blurring Warning Signal. In primary headaches,Migraine – 23% visual, 10% temperature and 19%

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endocrine aggravating factors. In TTH- 30% temperature and 20% endocrine aggravating factors. In Cluster headache- 15% endocrine aggravating factor.In secondary headaches, most of the patients had Nil Aggravating Factors. In both primary headaches & secondary headaches most of the patients were relieved by pharmacological treatment

Conculsion : From our study on chronic headache we conclude that the most common type of chronic headache is chronic migraine followed by chronic tension type of headache. Chronic headache are more common in middle aged married women. Psychosocial factors need to be given importance while evaluating chronic headache

Keywords: clinical profile, headache, migraine, tension-type headache ,chronic headache

Introduction

Headache is among the most common reason for patients to seek medical attention on a global basis, being responsible for more disability than any other neurological problem. It has been estimated that almost half of the adult population have had a headache at least once within the last year [1]. Headache disorders, which are characterized by recurrent headache, are associated with personal and societal burdens of pain, disability, damaged quality of life, and financial cost [1]. Headache classification is based on the third edition of the International Classification of Headache Disorders (ICHD-3) beta in 2013 as primary headache disorders and secondary headache disorders. The primary headache disorders include migraine, tension-type headache (TTH), trigeminal autonomic cephalalgias (TACs), and other primary headache disorders. The secondary headaches include intracranial space-occupying lesions (SOLs), infections of the central nervous system, mainly meningitis or encephalitis; subarachnoid hemorrhage; giant-cell arteritis; cerebral venous thrombosis; and idiopathic intracranial hypertension [2]. The Global Burden of Disease Study 2010 (GBD2010) reported TTH as the second most prevalent disorder worldwide and migraine as the third, but migraine far outweighs TTH as a cause of disability [3]. In a South Indian study, one-year prevalence of any headache was 63.9% with prevalence of migraine being 25.2%, and the age-standardized one-year prevalence of TTH was 35.1%. The lifetime prevalence of TTH was 52% [4]. Migraine prevalence in women exceeds than that in adult men, with female:male ratio of 2.8:1 peaking to 3.3:1 between the ages of 40 and 50 years. Female predominance is maintained in the post-menopausal age group [5]. However prior to puberty, migraine prevalence is higher in boys than in girls [6]. Limited information is available on migraine in the developing countries like India, especially in the south-eastern states [7]. Cluster headache affects up to 0.1% of the population [8]. For cluster headache, male to female ratio is approximately 2.5:1 [8]. Secondary chronic headache occurred in 2.1% of people from general population [9]. Prevalence of chronic daily headache in general population is around 4% to 5% [10]. Medication overuse headache occurs in 17%-62% of those with chronic daily headache [10].

Materials & Methods: one thousand and seven patients attending All Patients attending headache clinic admitted/referred to the Neurology Department, Govt. Stanley Medical College and Hospital in the year 2016 were inculded in the study. Patients with headache are enrolled in the headache registry, proforma is filled then headache patients are instructed to maintain a dairy and instructed to approach Neurology department anytime. We followed up for a period of two years and the records are computerised .Inclusion criteria:Age: 15- 65 years, Males and females,Patients satisfying the headache criteria as per International headache society classification.Exclusion criteria:Paediatric, antenatal, post traumatic, neurosurgical and elderly patients with metabolic derangement are excluded from the study.

Results

Table-1 Headache with Age group

AGE GROUP	Diagnosis												
	Primary (N=896)						Secondary (N=111)						
	Migraine		Tension		Cluster		Sol		NCC		Tuberculoma		I.C.T	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
≤ 25	86	14.00	61	23.10	3	15.00	0	0	19	38.00	0	0	9	18.80
26 - 35	266	43.50	132	50.00	16	80.00	2	66.70	24	48.00	0	0	0	0
≥ 36	260	42.50	71	26.90	1	5.00	1	33.30	7	14.00	10	100	39	81.20
TOTAL	612	100	264	100	20	100	3	100	50	100	10	100	48	100
Chi square	155						62.92							
Df	4						6							
p-value	0.000 (Significant)						0.000 (Significant)							

Table :1 The study subjects were divided into two groups based on type of headache. They are primary 896 (89%) and secondary 111 (11%). Among the primary headaches 612 (68.30 %) migraine, 264 (29.50%) Tension and 20 (2.20%) Cluster headache.In Migraine- 43.50 % are in the 26-35 years of age which is comparable with AMPS-I study were peak age was around 3rd to 4th decade.Tension type headache- 50 % are in the 26-35 years of age which is comparable with one study was the peak prevalence between 30-40 year. Cluster headache- 80% are in the 26-35 years of age.The most probable reason for primary headache in this age group due to hormonal, stress and socio-economic factors.The chi-square value is significant at $p < 0.05$ (The actual value of P=0.000), it is inferred that there is strong association between the Primary type of headache and the age of the patients.Among the Secondary headache 3 (2.70%) SOL, 50 (45.05%) NCC, 10 (9%) Tuberculoma and 48 (43.24%) I.C.T. headache. SOL- 66.7 % were in the age between 26-35 years of age.NCC- 48 % were in the age between 26-35 years of age.Tuberculoma- all patients above 36 years of age.ICT- all patients above 36 years of age.The chi-square value is significant at $p < 0.05$ (The actual value of P=0.000), it is inferred that there is strong association between the secondary headache in particular age between 26-35 years.

Table-2 Occupation in headache patients

Occupation	Diagnosis												
	Primary (N=896)						Secondary (N=111)						
	Migraine		Tension		Cluster		Sol		NCC		Tuberculoma		I.C.T	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Manual Labour	30	4.90	50	18.90	3	15.00	0	0	8	16.00	10	100	0	0
Self Employed	76	12.40	9	3.40	0	0								
Govt.	26	4.20	11	4.20	0	0								

Service														
No Job	480	48.40	194	73.50	17	85.00	3	100	42	84.00	0	0	48	100
TOTAL	612	100	264	100	20	100	3	100	50	100	10	100	48	100
Chi square	59.28						61.54							
Df	6						3							
p-value	0.000 (Significant)						0.05 (Significant)							

Table :2 shows In the primary type, 48 % of migraine people, 74% of tension headache and 85 % of Cluster headache are having no Job.In the secondary headache the people who are suffering SOL, Tuberculoma and ICT were not have any Job. Chi-square value were significant at p <0.05 in both type (the actual value of P=0.000, P=0.05), it indicates that there is association between the type of headache and the Occupation.

Table-3 Consanguinity and Headache

Consanguinity	Diagnosis													
	Primary (N=896)						Secondary (N=111)							
	Migraine		Tension		Cluster		Sol		NCC		Tuberculoma		I.C.T	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Non Consanguinity	59	9.6	196	74.20	20	100	3	100	50	100	10	100	50	100
First Degree	10	1.60	11	4.20	0	0								
Second Degree	20	3.30	0	0	0	0								
Third Degree	523	85.5	57	21.60	0	0								
TOTAL	612	100	264	100	20	100	3	100	50	100	10	100	48	100
Chi square	41.37						-							
Df	6						-							
p-value	0.000 (Significant)						-							

Table :3 In the primary headaches, 74% of TTH and 100% of cluster headache showed non-consanguinity. In Migraine 86% of patients showed 3rd degree consanguinity .In the secondary headaches all showed non-consanguinity.Chi-square value were significant at p <0.05 in both type (the actual value of P=0.000, P=0.05), it indicates that there is association between the type of headache and the consanguinity.

Table-4:Family History in headache patients

Family	Diagnosis

History	Primary (N=896)						Secondary (N=111)							
	Migraine		Tension		Cluster		Sol		NCC		Tuberculoma		I.C.T	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Brother	10	1.60	11	4.20	0	0	0	0	0	0	0	0	0	0
Father	40	6.50	0	0	0	0	0	0	0	0	0	0	9	18.80
Mother	40	6.50	20	7.60	0	0	0	0	0	0	0	0	0	0
Sister	18	2.90	11	4.20	0	0	0	0	0	0	0	0	0	0
No	504	82.40	222	84.10	20	100	3	100	50	100	10	100	39	81.20
TOTAL	612	100	264	100	20	100	3	100	50	100	10	100	48	100
Chi square	28.03						12.86							
Df	8						3							
p-value	0.000 (Significant)						0.005 (Significant)							

In primary headaches, 17% of migraine, 16% of TTH showed family history and there was no family history in cluster headache.Migraine was more common in families which correlates with a population based study which shows risk of migraine in first degree relatives is 1.5- 4 fold.TTH was more in no family history in our study probable attributed to the same socio economic and stress factors.In secondary headache, there was no family history in all typesChi-square value were significant at p <0.05 in both type (the actual value of P=0.000, P=0.05), it indicates that there is association between the type of headache and the Family History.

Table-5Affected Site distribution of Headache patients

Affected Site	Diagnosis													
	Primary (N=896)						Secondary (N=111)							
	Migraine		Tension		Cluster		Sol		NCC		Tuberculoma		I.C.T	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Unifocal	190	31.00	52	19.70	2	10.00	1	33.30	18	36.00	0	0	0	0
Bifocal	195	31.90	105	39.80	5	25.00	1	13.30	5	10.00	0	0	29	60.40
Global	127	20.80	47	17.80	11	55.90	1	33.30	19	38.00	10	100	10	20.80
Nonspecific	100	16.30	60	22.70	2	10.00	0	0	8	16.00	0	0	9	18.80
TOTAL	612	100	264	100	20	100	3	100	50	100	10	100	48	100
Chi square	32.20						60.88							
Df	6						9							
p-value	0.000 (Significant)						0.000							

Table :5 In primary headaches,Migraine: 32% was bilateral and 31% was unilateral. TTH: 42% was bilaterally affected. Cluster headache: 10% was unilateral and 25% was bilateral. In secondary headaches: 33% of SOL, 38% of NCC, all Tuberculoma and 21% ICT was globally affected.Chi-square value were significant at p <0.05 in both type (the actual value of P=0.000, P=0.000), it indicates that there is association between the type of headache and the Affected Site.

Table :6 Mode of onset in Headache patients

Mode of onset	Diagnosis													
	Primary (N=896)						Secondary (N=111)							
	Migraine		Tension		Cluster		Sol		NCC		Tuberculoma		I.C.T	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Acute	83	13.60	92	34.80	5	25.00	1	33.30	5	10.00	0	0	9	18.80
Chronic	90	14.70	78	29.50	5	25.00	0	0	5	10.00	0	0	10	20.80
Sub acute	439	71.70	94	35.60	10	50.00	2	66.70	40	80.00	10	100	29	60.40
TOTAL	612	100	264	100	20	100	3	100	50	100	10	100	48	100
Chi square	103.32						10.16							
Df	4						6							
p-value	0.000 (Significant)						0.12 (Not Significant)							

Table :6 In primary headaches, 72% of migraine, 36% of TTH and 50% of cluster headaches are having sub acute mode of onset.In secondary headaches, 33% of SOL, 10% of NCC and 19% of ICT headache was acute in onset. About 67% of SOL, 80% of NCC and All Tuberculoma and 60% of ICT headache are having Sub Acute Mode of onset.Chi-square value were significant at p <0.05 in Primary type (the actual value of P=0.000), it indicates that there is association between the type of headache and Mode of onset. But not significant at Secondary Type.

Table-7 Duration and Headache

Duration onset	Diagnosis													
	Primary (N=896)						Secondary (N=111)							
	Migraine		Tension		Cluster		Sol		NCC		Tuberculoma		I.C.T	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
1-2 Hours	529	86.40	213	80.70	17	85.00	3	100	42	84.00	0	0	29	60.40
3-5 Hours	64	10.50	51	19.30	3	15.00	0	0	8	16.00	0	0	19	39.60
>5 Hours	19	3.10	0	0	0	0	0	0	0	0	10	100	0	0
TOTAL	612	100	264	100	20	100	3	100	50	100	10	100	48	100
Chi square	20.59						119.88							
Df	4						6							
p-value	0.000 (Significant)						0.000 (Significant)							

Table :8 In primary headaches, 86% of migraine, 81% of TTH and 85% of cluster headache patients have duration of onset 1 – 2 hours. In our study maximum hours of headache duration occurred with migraine headache.In secondary headaches, all of SOL, 84% of NCC and 60% of ICT headache have duration of onset 1 – 2 hours.Chi-square value were significant at p <0.05 in both type (the actual value of P=0.000, P=0.000), it indicates that there is association between the type of headache and Duration.

Table-9 Frequency distribution of Headache

Frequency	Diagnosis														
	Primary (N=896)						Secondary (N=111)								
	Migraine		Tension		Cluster		Sol		NCC		Tuberculoma		I.C.T	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Daily	330	53.90	161	61.00	7	35.00	1	33.30	23	46.00	0	0	0	0
Weekly	127	20.80	59	22.30	81	40.00	1	33.30	22	44.00	0	0	19	39.60
Bi-Weekly	52	8.50	11	4.20	5	25.00	1	33.30	5	10.00	0	0	29	60.40
Monthly	33	5.40	0	0	0	0					10	100		
>A Monthly	70	11.40	33	12.50	0	0								
TOTAL	612	100	264	100	20	100	3	100	50	100	10	100	48	100
Chi square	37.19						12.86							
Df	8						3							
p-value	0.000 (Significant)						0.005 (Significant)							

Table :9 In primary headaches, 54% of migraine and 61% of TTH have daily frequency. In Cluster headache 40% have weekly frequency.In Secondary headaches, 33.30% of Sol, 46% of NCC has daily frequency. Tuberculoma was monthly and ICT headache 60% was biweekly.Chi-square value were significant at p <0.05 in both type (the actual value of P=0.000, P=0.005), it indicates that there is association between the type of headache and Duration.

Table-10 Temporal Pattern of Headache distribution

Pattern	Diagnosis														
	Primary (N=896)						Secondary (N=111)								
	Migraine		Tension		Cluster		Sol		NCC		Tuberculoma		I.C.T	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Episodic	90	14.70	22	8.30	0	0								
Intermitte	352	57.50	132	50.00	0	0	3	100	50	100	0	0	48	100

	N	%	N	%	N	%	N	%	N	%	N	%	N	%
nt														
Periodic	140	22.90	99	37.50	20	100			0	0	10	100	0	0
Persisting	30	4.90	11	4.20	0	0								
TOTAL	612	100	264	100	20	100	3	100	50	100	10	100	48	100
Chi square	38.76						111.00							
Df	6						3							
p-value	0.000 (Significant)						0.005 (Significant)							

Table :10 In primary headaches, 56% of migraine, 50% of TTH have intermittent pattern. Cluster headache showed 100% periodicity. Persistency was seen in migraine and TTH whereas periodicity maintained in cluster headache.In the Secondary headache, All of SOL, NCC and ICT headache are having pattern of intermittent. Chi-square value were significant at p <0.05 in both type (the actual value of P=0.000, P=0.005), it indicates that there is association between the type of headache and Pattern

Table-11 Intensity and Headache

Intensity	Diagnosis													
	Primary (N=896)						Secondary (N=111)							
	Migraine		Tension		Cluster		Sol		NCC		Tuberculoma		I.C.T	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Mild	203	33.20	103	39.00	7	35.00	2	66.70	23	46.00	0	0	19	39.60
Moderate	264	43.10	121	45.80	5	25.00	0	0	5	10.00	10	100	29	60.40
Severe	145	23.70	40	15.20	8	40.00	1	33.30	22	44.00	0	0	00	
TOTAL	612	100	264	100	20	100	3	100	50	100	10	100	48	100
Chi square	13.21						12.86							
Df	4						3							
p-value	0.01 (Significant)						0.005 (Significant)							

Table :12 In primary headaches-Migraine was 33% mild, 43% moderate and 24% severe in intensity. TTH was 33% mild, 45% moderate and 40% severe in intensity.Cluster Headache was 35% mild, 25% moderate and 40% severe in intensity.Both migraine and TTH was moderate in intensity, but maximum severe intensity seen in cluster headache.In Secondary headaches, all were moderate to severe in intensity.Chi-square value were significant at p <0.05 in both type (the actual value of P=0.01, P=0.005), it indicates that there is association between the type of headache and Intensity.

Table-12 Character and Headache

Quality	Diagnosis

	Primary (N=896)						Secondary (N=111)							
	Migraine		Tension		Cluster		Sol		NCC		Tuberculoma		I.C.T	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Boring	0	0	33	12.50	10	0								
Dull	117	19.10	49	18.60	6	0	0	0	16	32.00	10	100	10	20.80
Heaviness	9	100	0	0	0	0	0	0	0	0	0	0	9	18.80
Pricking	10	1.60	10	3.80	0	0								
Shock Elect	19	3.10	0	0	0	0								
Throbbing	457	74.70	172	65.20	14	70.00	3	100	34	68.00	0	0	29	60.40
TOTAL	612	100	264	100	20	100	3	100	50	100	10	100	48	100
Chi square	99.90						36							
Df	10						6							
p-value	0.000 (Significant)						0.000 (Significant)							

Table :12 In primary headaches-Migraine headache was throbbing in 75% patients and dull in 19% of patients.TTH was throbbing in 65% of patients and dull in 19% of patients.Cluster headache was throbbing in 70% of patients.Throbbing headache was maximally seen in migraine headache.In Secondary headaches, 100 % of Sol, 68% of NCC, 60% of ICT headache was throbbing and it was dull headache in Tuberculoma. Chi-square value were significant at p <0.05 in both type (the actual value of P=0.01, P=0.005), it indicates that there is association between the type of headache and Quality.

Table-13 Warning Signals in Headache Patients

Warning Signal	Diagnosis													
	Primary (N=896)						Secondary (N=111)							
	Migraine		Tension		Cluster		Sol		NCC		Tuberculoma		I.C.T	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Visual Blurring	348	56.90	143	54.20	20	100	3	100	50	100	0	0	29	60.40
Fatigue	216	35.30	92	34.80	0	0	0	0	0	0	10	100	0	0
Giddiness	10	1.60	0	0	0	0								
Sensory	8	1.30	0	0	0	0								
Vertigo													10	20.80

Nil	30	4.90	29	11.00	0	0	0	0	0	0	0	0	9	18.80
TOTAL	612	100	264	100	20	100	3	100	50	100	10	100	48	100
Chi square	33.96						139.40							
Df	8						9							
p-value	0.000 (Significant)						0.000 (Significant)							

Table :13 In primary headaches, 57% of migraine, 54% of TTH and 100% of Cluster headache have visual blurring as warning signal.In primary headache visual blurring is the most common warning signal seen in our study In Secondary headaches, All of Sol, All of NCC headache and 60% ICT are having Visual blurring Warning Signal. Chi-square value were significant at p <0.05 in both type (the actual value of P=0.01, P=0.005), it indicates that there is association between the type of headache and Warning Signal.

TABLE-14Aura Distribution among the Headache patients

Aura	Diagnosis													
	Primary (N=896)						Secondary (N=111)							
	Migraine		Tension		Cluster		Sol		NCC		Tuberculoma		I.C.T	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Visual	470	76.80	130	49.20	0	0	0	0	0	0	0	0	48	100
Sensory	142	23.20	54	20.50	1	5.00	0	0	11	22.00	0	0	00	0
Nil	0	0	80	30.30	19	95.00	3	100	39	78.00	10	100	0	0
TOTAL	612	100	264	100	20	100	3	100	50	100	10	100	48	100
Chi square	441.13						117.11							
Df	4						6							
p-value	0.000 (Significant)						0.000 (Significant)							

Table :14 In primary headaches,Migraine – 77% had visual aura and 23% had sensory aura. TTH- 49% had visual aura.In secondary headaches, 78% of Tuberculoma had visual aura. There was no aura in SOL, NCC and ICT headache .Chi-square value were significant at p <0.05 in both type (the actual value of P=0.000, P=0.05), it indicates that there is association between the type of headache and the Aura.

Table-15Accompanying Symptoms of the Headache Patients

Accompanying Symptoms	Diagnosis													
	Primary (N=896)						Secondary (N=111)							
	Migraine		Tension		Cluster		Sol		NCC		Tuberculoma		I.C.T	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Sensory	126	20.60	53	20.10	0	0	0	0	0	0	10	100	9	18.80

	Migraine N	%	Tension N	%	Cluster N	%	Sol N	%	NCC N	%	Tuberculoma N	%	I.C.T N	%
GI	180	29.40	83	31.40	3	15.00	0	0	8	16.00			30	62.50
Others	20	3.30	0	0	0	0	0	0	0	0	0	0	0	0
Nil	286	46.70	128	48.50	17	85.00	3	100					9	18.80
TOTAL	612	100	264	100	20	100	3	100	50	100	10	100	48	100
Chi square	21.04						12.86							
Df	6						3							
p-value	0.002 (Significant)						0.005 (Significant)							

Table :15 In primary headaches,Migraine – 20% had sensory symptoms, 30% had GI symptomsTTH- 20% had sensory symptoms, 32% had GI symptomsCluster headache- 15% had GI symptoms and ipsilateral conjunctival injection, tearing and nasal congestion, ptosis seen in 85% of patients.In secondary headaches, SOL and Tuberculoma had no symptoms. About 16% of NCC and 63% of ICT headache have GI symptomsChi-square value were significant at p <0.05 in both type (the actual value of P=0.000, P=0.01), it indicates that there is association between the type of headache and the Accompanying Symptoms.

Table-16 Aggravating Factors in Headache Patients

Aggravating Factors	Diagnosis													
	Primary (N=896)						Secondary (N=111)							
	Migraine		Tension		Cluster		Sol		NCC		Tuberculoma		I.C.T	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Visual	137	22.40	0	0	0	0	0	0	0	0	10	100	10	20.80
Temperature	59	9.60	81	30.70	0	0	0		0	0	0		20	41.70
Endocrine	119	19.40	52	19.70	3	15.00	0		8	16.00	0		9	18.80
Others	80	76.20	20	7.60	5	25.00	1	33.30	5	10.00	0		0	
Nil	217	35.50	111	42.00	12	60.00	2	66.70	37	74.00	0		9	18.80
TOTAL	612	100	264	100	20	100	3	100	50	100	10	100	48	100
Chi square	131.81							12.86						
Df	8							3						
p-value	0.000 (Significant)							0.005 (Significant)						

In primary headaches,Migraine – 23% visual, 10% temperature and 19% endocrine aggravating factors. In TTH- 30% temperature and 20% endocrine aggravating factors. In Cluster headache- 15% endocrine aggravating factor.In secondary headaches, most of the patients had Nil Aggravating Factors. Chi-square value were significant at p <0.05 in both type (the actual value of P=0.000, P=0.05), it indicates that there is association between the type of headache and Aggravating Factors.

Table-17Relieving Factors distribution Headache Patients

Relieving Factors	Diagnosis													
	Primary (N=896)						Secondary (N=111)							
	Migraine		Tension		Cluster		Sol		NCC		Tuberculoma		I.C.T	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Nil	11	1.80	0	0	0	0								
Non Pharmacologic and vomiting	94	15.40	30	11.40	5	25.00								
NON Pharmacology	0	0	10	3.80	0	0	1	33.30	14	28.00	0	0	0	0
Non+Pharma	0	0	10	3.80	0	0								
Pharmacological	455	74.30	204	77.30	10	50.00	1	33.30	31	62.00	10	100	48	100
Sleep	32	5.20	20	7.60	5	25.00	1	33.30	5	10.00	0	0	0	0
Vomiting	10	1.60	0	0	0	0								
TOTAL	612	100	264	100	20	100	3	100	50	100	10	100	48	100
Chi square	56.61						31.54							
Df	12						6							
p-value	0.000 (Significant)						0.000 (Significant)							

In both primary headaches & secondary headaches most of the patients were relieved by pharmacological treatment.Chi-square value were significant at p <0.05 in both type (the actual value of P=0.000, P=0.000), it indicates that there is association between the type of headache and Relieving Factors.

Table-18 Trigger Zone in Headache Patients

Trigger Zone	Diagnosis													
	Primary (N=896)						Secondary (N=111)							
	Migraine		Tension		Cluster		Sol		NCC		Tuberculoma		I.C.T	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Chillness	0	0	11	4.20	0	0								
Nodularity	205	33.50	53	20.10	8	40.00	1	3.30	11	22.00	0	0	11	22.00
Tenderness	60	9.80	18	6.80	0	0								

Nil	347	56.70	182	68.90	12	60.00	2	66.70	39	48.00	10	100	39	78.00
TOTAL	612	100	264	100	20	100	3	100	50	100	10	100	48	100
Chi square	46.50						20.27							
Df	6						3							
p-value	0.000 (Significant)						0.005 (Significant)							

Table :18 In primary headaches,Migraine – 34% nodularity, 10% tenderness as triggerzone and 57% had no trigger zone.TTH- 21% nodularity as trigger zone and 70% had no trigger zone.Cluster headache - 40% nodularity as trigger zone and 60% had no trigger zone.In secondary headaches, most of the patients had no Trigger Zone. Chi-square value were significant at p <0.05 in both type (the actual value of P=0.000, P=0.05), it indicates that there is association between the type of headache and Trigger Zone.

Table-19Comorbidty in Headache Patients

Comorbidty	Diagnosis													
	Primary (N=896)						Secondary (N=111)							
	Migraine		Tension		Cluster		Sol		NCC		Tuberculoma		I.C.T	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Diabetes	9	1.50	11	4.20	0	0								
Hypertension	21	3.40	0	0	0	0	0	0	0	0	0	0	9	18.80
Mvps	10	1.60	9	3.40	0	0								
Nil	572	93.50	234	88.60	20	100	3	100	50	100	10	100	39	81.20
TOTAL	612	100	264	100	20	100	3	100	50	100	10	100	48	100
Chi square	43.92						12.86							
Df	8						3							
p-value	0.000 (Significant)						0.005 (Significant)							

In primary headaches, 94% of migraine, 89% of TTH and 100% of Cluster headache patients have nil comorbidty.In secondary headaches, all patients with SOL, NCC, Tuberculoma and 81 % ICT People Experience Comorbidty. Chi-square value were significant at p <0.05 in both type (the actual value of P=0.000, P=0.01), it indicates that there is association between the type of headache and Comorbidty.

Table-20Diagnosis with Facial Expression

Facial Expression	Diagnosis													
	Primary (N=896)						Secondary (N=111)							
	Migraine		Tension		Cluster		Sol		NCC		Tuberculoma		I.C.T	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%

Frowning	142	23.20	130	49.20	0	0	0	0	0	0	0	0	48	100
Asymmetry	470	76.80	54	20.50	1	5.00	0	0	11	22.00	0	0	0	0
Normal	0	0	80	30.30	19	95.00	3	100	39	78.00	10	100	0	0
TOTAL	612	100	264	100	20	100	3	100	50	100	10	100	48	100
Chi square	441.13						117.11							
Df	4						6							
p-value	0.000 (Significant)						0.000 (Significant)							

In primary headaches, out 612 People who are suffering from migraine headache, 76.80 % of people have Asymmetry face. Out of 264 people who suffering Tension headache, nearly 49 % of people have Frowning facies. Out 20 people who suffering Cluster headache, 95 % of people have Normal face. In secondary type, all the 3 people with SOL have normal face. Out of 50 people who are having NCC headache, 78 % of them are having Normal face. In Tuberculoma all have normal face. All 48 people who are having ICT headache, all of them were having frowning face.Chi-square value were significant at p <0.05 in both type (the actual value of P=0.000), it indicates that there is association between the type of headache and the face expressions.

Discussion

In this prospective observational study, we evaluated clinical presentation, investigations, and management pattern of patients presenting with headache at the tertiary care center. In our study, 40% patients were from the age group of 21-30 years. Our observations are similar to other studies reporting maximum number of patients from this age group [11]. In our population, the female to male ratio was approximately 3:2, suggesting higher rates of headache in females as compared to males. Other studies have reported even more incidence rates in female patients (7.4:2.6 and 6.2:3.8, respectively) [11,12]. Influence of hormones plays an important role in primary headache in females [13]. Primary headache was more common than secondary headache in our study. This observation is also in similar lines with published literature [11,14]. Among the patients with primary headache, migraine (with and without aura) was the most common type of headache, in our study followed by TTH. Another study reported TTH as the most common type of headache [14]. Among secondary headaches, intracranial bleeding was the most common cause followed by CVST, sinusitis, and intracranial SOLs. A total of 25% of our headache patients required hospitalization. Owolabi et al. had reported migraine with aura in 42% and without aura in 58% [10]. In our study, 71.2% of patients were migraine without aura. The common triggering factors for migraine with/without aura were fasting, stress, menstruation, inadequate sleep, and hunger. Occurrence of migraine may be influenced by menstruation, pregnancy, and hormonal therapies in females [15]. Nausea, vomiting, photo-phonophobia, and neck pain were the most common accompanying symptoms in headache patients in our study. Most common addiction history in our study participants was pan (betel) addiction. TTH, the most common type of primary headache worldwide, can be episodic or chronic [16]. A total of 38.3% patients fulfilled criteria for tension-type headache in our study of whom 68.9% were categorized as episodic and 31.1% as chronic TTH. In another study from Southeast Asia, the incidence of TTH ranged from 20% to 40% with a female preponderance [17]. The incidence of cluster and TACs in our study was low, probably because of duration of study.

In our study, in the migraine subset, 81% presented with moderate (grade 3) to severe disability (grade 4) at baseline and significantly reduced to minimal (grade 1) to mild (grade 2) disability at three and six months. A strong positive correlation was observed with reduction in the HIT-6 score at three and six months from baseline. Correlation was observed with increasing duration of therapy and primary preventive measures.Use of non-steroidal anti-inflammatory drugs and triptans is common in the

treatment of acute attack of migraine. Anti-emetics are also commonly used for treatment of nausea and vomiting. In our study for abortive treatment, maximum number of patients received naproxen, domperidone, and sumatriptan. This was followed by paracetamol and ibuprofen combination; paracetamol and tramadol combination; and paracetamol, ergotamine, caffeine, and domperidone in combination. Review of literature suggests higher incidence of all-adverse events with sumatriptan than diclofenac-potassium and ibuprofen [18]. In our study group, 42.3% patients received valproic acid/divalproex sodium for prophylaxis. It should be very careful in female patients with child-bearing potential [19].For treatment of TTH, drugs most commonly used were tricyclic antidepressants, analgesics, muscle relaxants, and combinations. The mean HIT-6 and VAS scores overall showed a significant improvement at three and six months post-treatment. Among patients with secondary headache, intracranial bleeding followed by CVST and intracranial SOLs were the most common. Most of the patients in our study had normal CT scan findings (81.8%) as reported in another study [20]. However, MRI was abnormal in 69% cases. Most common abnormalities on CT were intracerebral hemorrhage, SAH, sinusitis, and SOLs, while most common abnormalities detected on MRI were CVST, sinusitis, and SAH.

Conclusion

In our study population, migraine was the most common etiology of headache, followed by TTH. Identification of secondary headaches is important and warrants active management. Detailed clinical history is necessary for the patients presenting with headache as their primary complaints, and timely radiological investigations are necessary for diagnosis of the etiology of the headache. Severity disability in primary headaches, especially migraine, can be prevented by proper prophylaxis. The study showed higher rates of headache in females than male patients and primary headache being more common than secondary headache. Sodium valproate is commonly used prophylaxis in migraine

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