Clinical profiles in Patients Suffering from Chronic Tension-type Headache

Rajamani Santhosh Kumar [1], K. Rathna Kumar[2]

[1]Assistant Professor of ENT Head and Neck surgery (Principle author)
Sri Lakshmi Narayana Institute of Medical Sciences, Osudu, Kudapakkam, Puducherry State, PIN 605 502, India

[2] Associate Professor of Ophthalmology (Second author)
Sri Lakshmi Narayana Institute of Medical Sciences, Osudu, Kudapakkam, Puducherry State, PIN 605 502, India

Abstract: ***Chronic Tension-type headache is the most common type of headache encountered in clinical setup. This study aims to examine the clinical profile of patients suffering from chronic Tension-type headache.***

Keywords: Tension-type headache, Chronic headache, Episodic headache, Daily headache

1. Introduction

Tension type headache is the most common type of headache seen in E.N.T headache clinic. This condition is particularly common in multiparous females, has been dubbed the "House-wife's headache". The persistent day-today nature of this headache has bestowed, the name "Daily headache" to this condition [1]. This study aims to study the clinical profile of patients suffering from the chronic variant of Tension-type headache, which is arbitrarily defined as Tension-type headache for more than 180 days in a year

2. Materials and Method

Patients were chosen from the subset of cases who attend our E.N.T headache clinic. We have a specialized O.P.D for diagnosis and management of Headache held on Tuesdays and Thursdays. Due consent was obtained from all cases and hospital and departmental ethical committee approval was obtained before the initiation of the study.

3. Diagnostic Inclusion Criteria

A total of 50 patients were chosen from the Headache clinic for this study. The diagnostic criteria for Chronic Tension type headache used in this study was as follows.

3.1. At least 10 episodes per year, Headaches lasting more than 180 days in a year [2] or than 15 days a month(Ref 1 and 6).

3.2. Bilateral headache, pain compressive in nature mild to moderate intensity localized to forehead. Pain intensity varies from attack to attack, with each attack lasting from minutes to hours.

3.3. Neck pain and rigidity of neck muscles [1, 6]

3. 4. A "Band" like constricting type of frontal pain was considered diagnostic [4]. Typically, the pain increases as the day progresses [5]. Presence of Depressive symptoms and any history of Psychiatric problems are a part of Tension type headache, hence were not excluded (Ref 4). Emotional stress was enquired as it is a known trigger for Tension type headache. Day today work and exertion does not increase the intensity of Chronic Tension-type headache [7].

3.5. General, E.N.T and neurologic examination is normal [2]. Blood pressure was checked to ensure normalcy, as Hypertension can by itself lead to Headache. Ophthalmological evaluation of Fundus and Visual fields was done to rule out Papilloedema and Brain tumors.

3.6. Pericranial Tenderness [6]

This is one of the clinical diagnostic test for Tension type headache. Palpation for the Pericranial Tenderness involves using two fingers to palpate the Frontalis, Temporalis, Masseter, Pterygoid, Sternomastiod and Trapezius muscles. This is included in second revision of International Classification of Headache disorders [6].

4. Diagnostic Exclusion criteria

4.1. Unilateral headache are suggestive of Migraine and related disorders were excluded [1]

4.2. Nausea, vomiting, photophobia, Aura are suggestive of Migraine were excluded [2].

4.3. Medication rebound headache is a distinct entity, with a picture similar to chronic tension type-headache. Subjects with a history of self administration of drugs, and use of over the counter pain killers for more than 3 months were not included in this study [8]

5. Type of Study

This was a type of Cross sectional descriptive epidemiological clinical study.

5.1 Methodology of study

The subjects who attended our Headache clinic were enquired about their willingness to participate in our study. After obtaining their consent they were given a questionnaire based on International Classification of Headache Disorders—2nd edition criteria (Ref 6). Their response to various test items, classified and tabulated and presented in the results as follows.

6. Observations

6.1 Sex wise distribution

Majority of Chronic Tension-type headache headaches are females (33/50) and Male to female ratio in our study was found to be 2:1 (= 33/17). This means that Tension-type headache is twice as more common in females than in males.

6.2 Average age of onset

Based on the questionnaire, Age of onset of headache was determined for the 50 patients and is summarized in the following graph.

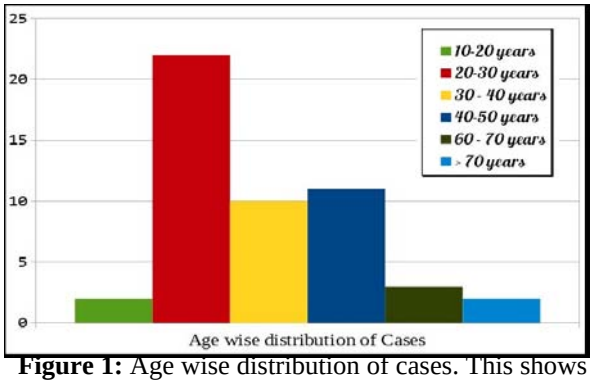

Figure 1: Age wise distribution of cases. This shows that most common age of onset is 20to 30 years. Chronic tension type headache is rare in extremes of age.

As it can be inferred from above, that the most common age of onset of Chronic Tension-type headache is early adulthood (20 -30 years) and Middle ages (30 to 50 years). Onset of this condition seems to be rare in extremes of ages.

6.3 Number of years of suffering

Chronic tension-type headache is a long standing condition that last for years and even decades. The following graph was drawn after feeding the data into the PAST statistical software package, it depicts the number of years of suffering.

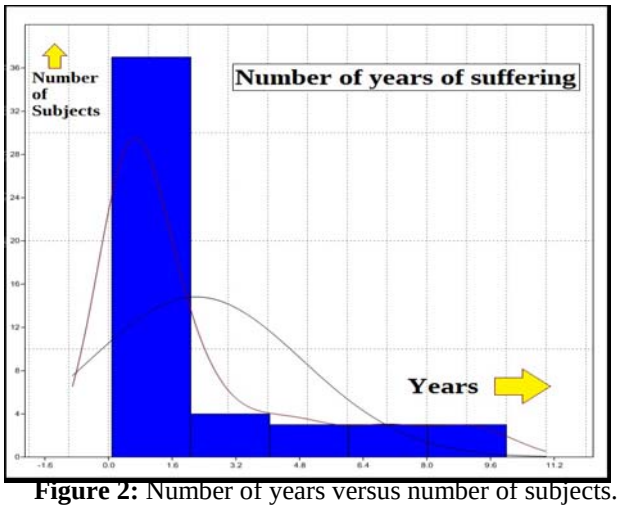

Figure 2: Number of years versus number of subjects. Chronic Tension type headache patients suffer from headache lasting an average of 2.2 years in duration. Overlaid on the background is the Normal curve.

The mean number of years of suffering was found to be 2.2 years (2 years 2 months 12 days). The standard deviation was found to be 2.7, standard error was found to be 0.38.

6.4 Quantification of Pain

A Visual Analogue scale (VAS) was used to quantify the intensity of pain from 0 to 10. The patients were asked to quantify the intensity of pain experienced during most of the episodes. The score of 0 represented no pain and 10 the worst pain they could imagine. This 0 to 10 VAS modelled after the pattern in similar studies on chronic headache. The patient reporting of pain is depicted below.

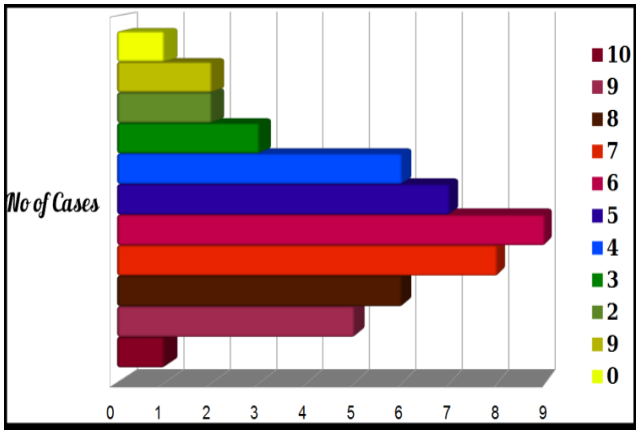

Figure 3: The intensity of pain on a visual Analogue scale as perceived by the patients. Majority of the patient reported the intensity on scale 6/10 as seen from graph. This classical picture of any Chronic pain.

6.5 Pericranial tenderness

Almost all the patients who participated in this study gave positive reponse to pericranial tenderness test (47 positive /50 cases = 94% of cases). This is a very important diagnostic clinical sign of Chronic tension type headache.

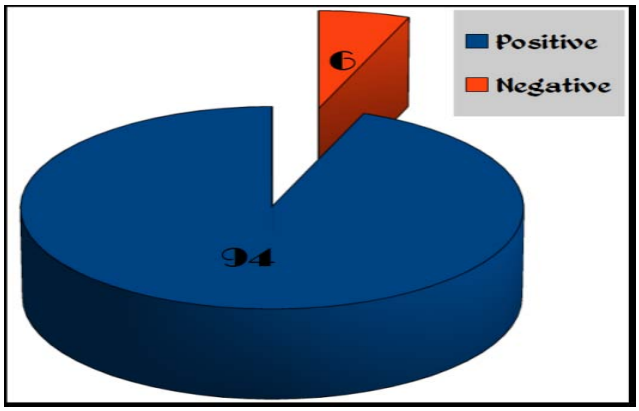

Figure 4: Pericranial tenderness was found in 94% (47/50) of the cases.

7. Discussion

The chronic subtype is of a more problematic entity, which is the cause of severe disability in sufferers and also leads to social stress. Pericranial tenderness is listed as a diagnostic finding in The International Classification of Headache Disorders, 2nd edition. Central pain perception mechanism

seems to play a pivotal role in chronic tension-type headache (Ref 6 and 11).

A "Band" like constricting type of pain, with a feeling of heaviness is again a hall mark feature of this condition. The following figure illustrates this.

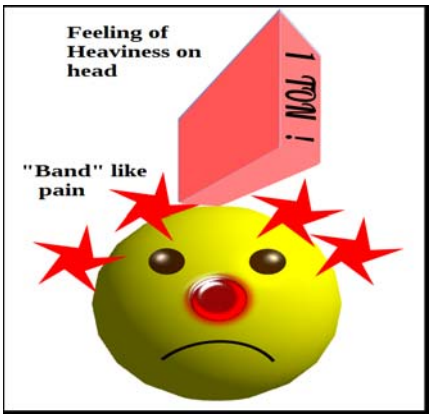

Figure 5: The hallmark, "Band" like bilateral pain over the scalp along with a feeling of heaviness over the head of Tension type headache. This is accompanied by the Pericranial muscle tenderness on palpation.

Most of the patients had the onset of the headache in their 20s and 30s, which was persistent; the average duration of suffering for a patient was 2.2 years. This was elucidated from our study. Day today work and exertion does not increase the intensity of Chronic Tension-type headache [7]. Majority of the patient reported the intensity on scale 6/10 as seen from above graph. In addition, varying intensity of pain is a classical symptom of tension- type headache, and pain is never severe in Intensity. This is the intensity represented by the grades 4,5,6,7 in the VAS scale used in our study and is illustrated in the cartoon picture that follows.

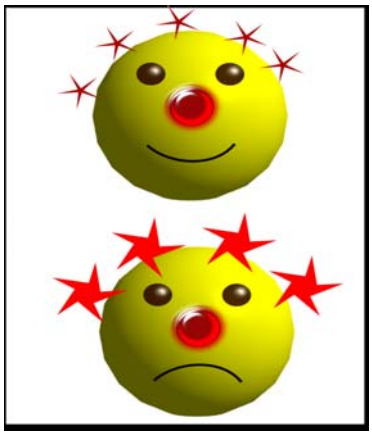

Figure 6: Varying intensity of pain "band" in Tension type headache, with mild pain patient can carry out his day today activities (Shown by smiling face). Days when he has severe pain can be incapacitating (Shown by sad face). Patients can go on for months with suffering.

Chronic migraine in which the sufferer has pain for more than 15 days in month is a differential diagnosis of this condition. But migrainous headache is more severe, unilateral and associated with nausea and photophobia. Medication-overuse headache is also a differential diagnosis of this condition.

Medication-overuse headache, (also known as Medication rebound headache) could develop after Regular overuse of drugs for more than 3 months. Subjects with history of self administration of drugs, and use of over the counter pain killers for more than 3 months were thus excluded from the study [8].

There seems to be altered pain perception in chronic tension-type headache patients. This change of perception seems to influence the conversion of frequent to chronic variant of Tension-type headache [10]. Certain authors like Jones classify bilateral mid-facial segmental pain (MFP) as a component of Primary headache specially the Tension-type headache pain. Tension type headache leads pain in the frontal, parietal, temporal in distribution [12].

The current model of Tension type headache attributes a Neurotransmitter probably Nitric oxide excess in second order neuron at the trigeminal nucleus sub-caudalis, leading to Hypersensitivity and release [13]. Nitric oxide inhibitors seem to be efficacious in treatment of Chronic Tension type headaches. Skin over the forehead and Temporal is particularly rich in Trigeminal nerve, which also supplies most of the scalp including the Occipital region. This explains the pain distribution in Tension type headache [14].

Pericranial tenderness is tenderness of pericranial myofascial tissues, soft tissue and muscle attachements that surround the skull: the Frontalis, Temporalis, Masseter, Pterygoid, Sternomastioid and Trapezius muscles. This can be done by hand palpation or by an algometer and graded on a 4 point scale [16]. Pericranial tenderness is a very sensitive sign in the diagnosis of Chronic tension type headache, present in 94% of the cases in our study. This may be the most important clinical sign of Chronic tension type headache [15].

Sinusitis can lead to dull aching pain lasting few hours in a day, but this is accompanied by Nasal discharge and nose block, sometimes with fever and fatigue [15, 16]. Pericranial soft tissue tenderness can be easily confused with Paranasal sinus tenderness which is elicited on the Sinus walls. Tenderness of muscles is a differentiating point for Tension type headache.

8. Conclusions

8.1. We conclude, Chronic tension type headache is a clinical condition with onset around youth (25 years of age 20-30), and a chronic variable course lasting many years. The average duration of suffering being 2.2 years. (2.2+/- 0.76).

8.2. Majority of patients suffer from a bearable type of variable moderate intensity pain (6 on VAS) lasting few hours on most of the days.

8.3. Pericranial tenderness is a important, underutilized diagnostic sign of Chronic tension type headache. This must not be confused with Paranasal sinus tenderness which is a entirely different condition altogether.

References

[1] Peter S. Staats and Nilesh Patel in "Pain Management in Head and Neck patient" section "Headache pain" Chapter 17 Cummings: Otolaryngology: Head & Neck Surgery, 4th ed.

[2] Lars Bendtsen and RigmorJensen in "Tension-type headache" in "Neurologic Clinics of North America" Neurol Clin 27 (2009) 525–535 Elsevier 2009 http://neurologic.theclinics.com

[3] Christensen M, Bendtsen L, Ashina M, et al. Experimental induction of muscle tenderness and headache in tension-type headache patients. Cephalalgia 2005; 25(11):1061–7.

[4] Randall Berliner and Richard P Lipton in "The Women with Episodic headache" in Chapter 1 Advance therapy of Headache B.C Decker inc 1999

[5] Ashish R. Shah, Frank N. Salamone, and Thomas A. Tami in "Acute & Chronic Sinusitis" Chapter 14 Section IV Sinuses pages 277-278 in CURRENT Diagnosis & Treatment in OTOLARYNGOLOGY—HEAD & NECK SURGERY - The McGraw-Hill 2008

[6] Headache Classification Subcommittee of the International Headache Society.The international classification of headache disorders. 2nd edition. Cephalalgia 2004; 24(Suppl 1):1–160.

[7] Paul J Millea and Jonathan J. Brodie "Tension-Type Headache" American Family Physician 2002 Sep 1:66(5):979-805

[8] Zaza Katsarava and Mark Obermann "Medication-overuse headache" in Curr Opin Neurol2013, 26:276–281 DOI:10.1097/WCO.0b013e328360d596

[9] Ferrante et al "Prevalence of tension-type headache in adult general population:the PACE study and review of the literature" Neurol Sci (2013) 34 (Suppl 1):S137–S138 DOI 10.1007/s10072-013-1370-4

[10] Soeet al.: Altered pain perception in children with chronic tension-type headache.The Journal of Headache and Pain 2013 1(Suppl 1):P17

[11] Aaset et al.: Pericranial muscle tenderness in a population based sample of chronic tension-type headache. The Akershus study of chronic headache.The Journal of Headache and Pain 20131(Suppl 1):P58

[12] Jones NS. Mid-facial segmental pain: Implications for rhinitis and sinusitis. Curr All Asthma Rep. 2004; 4: 187-192.

[13] Bendtsen L. Sensitisation: its role in primary headache. Curr Opin Invest Drugs 2001; 3: 449-453.

[14] Elizabeth Loder and Paul Rizzoli Tension-type headache Clinical Review BMJ 008;336:88-92 doi:10.1136/bmj.39412.705868.AD

[15] Anne MacGregor in Chapter 3 titled "Tension-type Headache" in "ABC of Headache" published by Blackwell Publishing Ltd 2009

[16] Bendtsen L, Jensen R, Jensen NK, Olesen J. Muscle palpation with controlled finger pressure: new equipment for the study of tender myofascial tissues. Pain. 1994;59:235–239

Author Profile

Rajamani Santhosh Kumar received M.B.B.S and M.S. (E.N.T) degrees from TN Dr MGR Medical University in 2005 and 2010 respectively with gold medals and awards. During 2010 -2011 he worked as a faculty at the Tagore Medical College Hospital, Chennai as Assistant Professor of ENT. In 2012 he worked in Hinduja Hospital, Mumbai where he obtained world class training in ENT Surgery. In 2012, he received the Diplomate of National board certification D.N.B in E.N.T. He is now working in Sri Lakshmi Narayana Institute of Medical Sciences, Puducherry as Assistant Professor of ENT. He is very actively involved in the academic pursuits of teaching, practicing and research in ENT, Head and Neck Surgery. He is now a Postgraduate faculty of the institute.

K Rathna Kumar completed his M.B.B.S, D.O and M.S. (Ophthalmology) from the prestigious Rajah Muthiah Medical College and Hospital, Annamalai University. He is currently working as Associate Professor in the Department of Ophthalmology at Sri Lakshmi Narayana Institute of Medical Sciences, Puducherry. He has been involved in Undergraduate teaching programme and has been performing Phaco and Manual Phaco surgeries. He is practicing comprehensive eye care.