DOI: https://doi.org/10.53350/pjmhs2115123586

ORIGINAL ARTICLE

The Knowledge of General Dentists Regarding Trigeminal Neuralgia in Lahore- a Questionnaire Based Study

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ABSTRACT

Objective: To assess and document the knowledge general dentists possess in relation to incidence, diagnosis and management of trigeminal neuralgia and its application in their practice.

Methods: This was a cross-sectional survey. The data collection tool was a piloted, self- designed, 14 item structured questionnaire that had questions regarding demographics, factual knowledge and practices of the participants. Hundred general dental practitioners were selected through purposive sampling in Lahore. Only general dentists were included in this survey and all other dental specialties were part of the exclusion criteria. Data was entered and analyzed using IBM SPSS Statistics® (Version 23).

Results: Most practitioners responded that they were able to identify a patient with trigeminal neuralgia on the basis of diagnosis of exclusion. Carbamezapine was the drug of choice of pharmacological management or in case pharmacological management did not provide relief the patient was referred to an oral and maxillofacial surgeon.

Conclusion: It was concluded that general dentists had adequate knowledge and sound practices on management of Trigeminal Neuralgia. A need for multi-disciplinary approach and continued medical education (CME) was identified.

Keywords: Dentists, Disease Management, Facial Pain, Neuralgia, Knowledge, Trigeminal Neuralgia (TN).

INTRODUCTION

Trigeminal Neuralgia is a chronic orofacial pain disease with an incidence of 4.3 per 100,000 persons per year [1] and a prevalence of 0.3%.[2] Recent research literature has redefined and reclassified and reiterated the diagnostic criteria of TN.[3-5] The most accepted definition by the International Classification of Headache Disorders (ICHD-3) states that it is a disorder characterized by recurrent unilateral brief electric shock-like pains, abrupt in onset and termination, limited to the distribution of one or more divisions of the trigeminal nerve and triggered by innocuous stimuli.[3] While ICHD has simplified it into two major categories of classical and painful trigeminal neuropathy with several subcategories each having its own diagnostic criteria, other systems tend to look at it objectively and classify based on clinical investigations and research.[4,5]

Pharmacological management is the first line of action [6] followed by surgical intervention when medication fails to provide relief after the administration of at least three drugs. [7-9]

A dentist who is equipped with abundant knowledge, skill and clinical exposure would be able to satisfactorily manage such patients. The ADEA issued a 38-point list of competences that a general dentist of the future must possess, one of which was establishment and maintenance of oral health.[10] The psychological, social and behavioral aspect of pain was highlighted as opposed to the traditional physical pain management. Hence, we see pain management evolve from the biomedical model to the bio-psycho-social model. The IASP proposed guidelines [11] for curricula in the management of pain but only 2 UK universities have introduced and enacted the complete guidelines.[12] Dentists have expressed that it is rather challenging to deal with a patient presenting with orofacial pain than the routine dental complaints. A questionnaire based on case scenarios of chronic orofacial pain was conducted on general dentists in the UK in which the participants were meant to diagnose, treat and/or refer patients in the said scenario.[13] Results of the study showed that most of the participants had made the correct diagnosis but their management and specialist for referral varied. In another study interviews of dentists, general practitioners and patients concluded that dentists and GPs both were ill-equipped to handle such patients and felt responsible for the distress that further aggravated the condition when referrals to multiple specialists without pain resolution were made.[14]

There is only one recent study conducted on patients with trigeminal neuralgia in Pakistan [15] and to our knowledge there have been none conducted on how dental surgeons practicing independently tend to evaluate patients, the criteria they use for a definitive diagnosis of trigeminal neuralgia and the treatment planning of such patients. Therefore, the current study was aimed to assess and document the knowledge of a general dentist in relation to diagnosis of trigeminal neuralgia and management of a patient with trigeminal neuralgia by a general dentist.

MATERIAL AND METHODS

This was a descriptive cross-sectional questionnaire-based survey. The data collection tool was a self-developed questionnaire which included 14 questions. The initial questions inquired about demographic details and later had multiple choice answers from which one or more options needed to be selected. The questionnaire was developed by a thorough review of related literature.[16] The questionnaire was piloted on 15 participants. The researchers were present throughout the pilot and obtained a thorough feedback from the respondents which was later used to help modify the questionnaire. To ensure face and content validity the questionnaire was reviewed by two experts in the field and one expert in research and questionnaire construction. The finalized version was approved by them.

The piloted and modified questionnaire was surveyed during December 2017. The sample was selected through non-random sampling technique. Snowball sampling design was employed. A dental material supplier was approached to distribute and collect questionnaire from dentists fulfilling the inclusion and exclusion criteria. The inclusion criteria for the study was being a General Dental Practitioners in Lahore. All Dental Specialists in Lahore were excluded as they may have advanced knowledge of trigeminal neuralgia. The inclusion and exclusion criteria were also mentioned on the consent form to assure adherence. A total of 100 General Dental Practitioners participated in the survey. Written consent was obtained from the participants. They were explained about their right of voluntary participation and nature of the study. Furthermore, they were assured of anonymity and confidentiality. Ethical Approval Letter was issued by IRB of Institute of Dentistry, CMH LMC, Lahore. Data collected was entered and analyzed using IBM SPSS Statistics® (Version 23). Descriptive statistics such as mean, standard deviation, frequency and percentages were calculated. Pie charts and bar graphs were made to illustrate the data.

RESULTS

A total of 100 participants responded to the survey, 57(58.8%) were male and 40(41.2%) were female. The mean clinical experience of the dentists was 8.99 years (SD 7.29). Respondents who were taught how to treat trigeminal neuralgia in their undergraduate programme in class or clinic were reported to be 78.8% whereas 21.2% were not taught how to treat trigeminal neuralgia. Most respondents (88%) agreed that by definition trigeminal neuralgia is sporadic pain triggered by everyday activities, 12% of the respondents defined it as persistent pain, 9% as iatrogenic and only 5% said that it was evoked by dental procedures. Seventy percent of the respondents treated less than 10 patients at their practice where as 15% of the respondents had treated 0 patients and only 13% had treated less than 30. The participants responded that they observed more female patients (62.6%) in their practice whereas 37.4% observed more male patients. The most prevalent age group observed was the adult (61%) followed by old age (60%). Underlying factors that were most commonly associated by the respondents were iatrogenic (66.7%), followed by multiple sclerosis (59.6%), infection (53.5%), facial trauma (23.2%), diabetes mellitus (18.2%), elective head and neck surgery (17.2%) and AV malformation (8.1%).

Table 1: Summary of calculations made for all variables

	Variables	N (%)
Definition of TN	Sporadic pain	88 (88)
	Persistent pain	12 (12)
	Iatrogenic	9 (9)
	Evoked by dental procedures	5 (5)
Number of Patients	zero	15 (15)
	less than 10	70 (70)
	less than 30	13 (13)
	greater than 30	2 (2)
Gender of Patients	Female	62 (62)
	Male	25 (25)
	Equal	6 (6)
	Missing	7 (7)
Age Group Prevalent	Infancy	0(0)
	Childhood	1 (1)
	Young Adult	4(4)
	Adult	61(61)
	Old Age	60(60)
Underlying Factor	Iatrogenic	66 (66)
	Multiple Sclerosis	59 (59)
	Infection	53 (53)
	Facial trauma	23 (23)
	Diabetes Mellitus	18 (18)
	Elective head and neck surgery	17(17)
	AV malformation	8 (8)
	Others	1 (1)
Differentiating from other diseases	Natural Course	64 (64)
	Doesn't settle	57 (57)
	No pre-existing deficit	9(9)
	Others	0(0)
Medication prescribed	Carbamezapine	94 (94)
	Oxacarbamezapine	4(4)
	Gabapentin	26(26)
	Lamotrigine	0(0)
	Divalproxsodium	0(0)
	Baclofen	1(1)
	Clonazepam	3(3)
	Botulinum toxin	0(0)
	Others	3(3)
Failure of management	Refer	97(97)
	Microvascular	7(7)
	Radiosurgery	1(1)
	Radiofrequency	0(0)
	Others	1(1)

Natural course of the disease has helped respondents distinguish trigeminal neuralgia from other orofacial pain disorders, by about 64.6%, followed by unsettled pain after various types of treatment modalities used 57.6%. Diagnosis was made on the basis of patient history (94.9%) the most, followed by prescribing carbamezapine (48%), diagnostic LA (40.8%) and ruling out dental pain (31.6%). Only 23.5% of the patients were previously diagnosed.

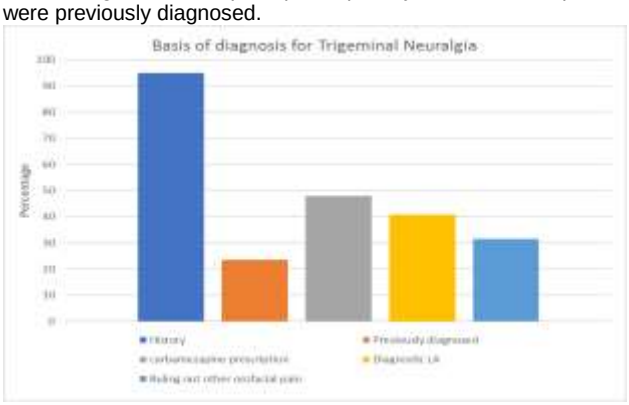

Figure 1: Factors that aided in diagnosing trigeminal neuralgia

Medication (66.7%) was the first line of management preferred by the respondents. Others preferred referring patients to Oral and Maxillofacial surgeons (39.4%) and neurophysicians (11.1%). Only 1% chose glycerol injections and surgical intervention as first line management [Figure 2].

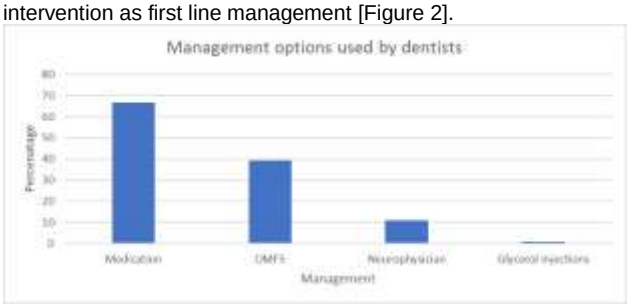

Figure 2: Options chosen for management of trigeminal neuralgia

DISCUSSION

Data obtained from this cross-sectional questionnaire-based study provided us valuable information regarding dental practitioners and their knowledge of trigeminal neuralgia. Though a numerical figure of incidence and prevalence could not be calculated by this study, it does confirm a female predominance and that manifests from the ages 40 and above which corresponds to data from studies conducted in Germany [17,18], Iran [19] and others.[2,9] In our study, the highest identifiable disease associated with trigeminal neuralgia recorded by the participants was multiple sclerosis. Identifying MS-related TN early on in patients aids in treatment as the routine management of TN is of little help to them and a different course of action needs to be taken in such cases.[20] Some of the diagnostic aids that a German study [18] relied greatly upon are not readily available at every centre in Pakistan, which makes patient history our most common and relied upon tool, thus limiting the diagnosis, leaving cases undiagnosed and/or misdiagnosed which is seen to be up to 48% by physicians.[21]

In general, it can be seen that most participants tend to have a fairly sound baseline knowledge regarding the epidemiology, pathophysiology of the disease and initial management. Difficulty seems to arise where pain management to achieve stable pain control regime cannot be established. In such a case, an alarming number of referrals to specialists have been made. A study comparing general dentists and specialist showed a knowledge gap between the two hence, the readiness to refer to a specialist was observed.[22] In our study this could have been due to self-perceived insufficiency of knowledge and/or skill, despite expressing that they have received education on trigeminal

neuralgia as part of their curriculum in their undergraduate program.

On the contrary, a study on dental students and dentists reported that only 37% of the dentists believed they had adequate knowledge of pain management and that the education that was received in their time at dental school was not enough. Dentist gave the least correct answers to the survey as compared to dental students.[16] Inadequate management of pain and high referral rates have been reported in other studies too [13,14] revealing that the system has failed to tackle the problems that general dentists face in day-to-day practice. An approach different from the current didactic model needs to take place. A 4-tier system [12] needs to be adopted where the first tier represents basic pain and pain related disease education which includes anatomy, epidemiology, pathophysiology, natural history diagnosis and treatment of the disease. The second tier would introduce critical thinking and problem-based learning whereas the third tier would subject students to interdisciplinary management of pain by exposing students of different healthcare programs to a problem. The fourth and final tier would be taking place at a community setting with an interdisciplinary team working with patients. This interdisciplinary approach to education and practice aids in improving the quality of life of patients as this disease affects different aspects of a patient's health hence various specialists collaborating and providing crucial input to patient care is what is required in such complex cases and dedicated pain clinics are the facilities which may help accomplish this.[23]

The ADEA approved qualities or "competencies" a general dentist must possess to face the possible challenges of the future.[10] These included their ability to reflect on clinical decisions, social responsibilities, professionalism and communication skills. This can be done by realizing their responsibility, enrolling themselves in continuing dental education programs in order to keep their knowledge up-to-date and developing necessary skills in order to interact, understand, diagnose and manage their patients. A clinician may attend workshops and various seminars held by organizations that solely deal with orofacial pain. Regular use of journal that have been dedicated to research on trigeminal neuralgia in order to obtain up-to-date findings and comprehensive guidelines for management. All of these measures are necessary as pain from trigeminal neuralgia is pain of such excruciating nature may have detrimental impact on a patient's physical and psychological well-being if it is not treated.[24]

Despite, the plethora of research and papers published internationally on the disease, information from Pakistan is scarce and has trickled only recently. This study explored the knowledge and practices regarding management of trigeminal neuralgia in dentists practicing in Lahore which has not been previously documented in Pakistan, deeming it as its major strength. The small sample size and the observational study design limits the generalizability of the results.

CONCLUSION

The knowledge of general dentists was found to be adequate but a need to update the curriculum and improve the education model was identified. A patient's journey to wellness is found to be at a crossroads where multiple specialists meet.

Acknowledgement: I would like to acknowledge the relentless help offered BLINDED in revision of the final manuscript. Moreover, I would not have been able to complete this project without the contribution of the research participants.

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