ORIGINAL ARTICLE

Comparison of the current trends in managing trigeminal neuralgia among oral maxillofacial surgeons and neuro surgeons in Sindh

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Abstract

Objectives: To determine and current the current trends in managing trigeminal neuralgia among oral maxillofacial surgeons and neuro-physicians in Sindh – Pakistan.

Study design: Descriptive cross-sectional study.

Place and duration: This survey was conducted in the Altamash Institute of Dental Medicine, Karachi. The survey was initiated on the 30 November 2017 and was concluded on the 20th March 2018.

Materials and Method: A total of 110 practitioners from all over Karachi have participated in the study. A questionnaire was used to evaluate the current trends in the management of trigeminal neuralgia

Results: According to the results attained oral maxillofacial surgeons preferred plain radiograph for their investigation while neuro-physicians found MRI as their first choice for a patient with suspected trigeminal neuralgias. While the data showed that oral maxillofacial surgeons opted for a conservative pharmacological treatment, mostly carbamazepine. Neuro-physicians used Gabapentin most commonly in their practice. Majority of the patients were refractory who previously had undergone alcohol injections were encountered by both oral maxillofacial surgeons and neuro-physicians. The use of Gamma knife was rare to none due to non-affordability on the patient's part and non-availability on the doctor's side.

Conclusions: The management of trigeminal neuralgia (TN) is a challenge both for neuro physicians and oral maxillofacial surgeons. The lack of a full comprehension of the complex patho-genesis at the basis of trigeminal neuralgia remains a key factor.

Keywords: Trigeminal neuralgia, Tic douloureux, Radio frequency gamma knife surgery, carbamazepine, Gabapentin

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Introduction:

Trigeminal neuralgia (TN) is a prototypic neuropathic facial pain syndrome characterized by paroxysmal, shock-like pain attacks located in the somatosensory distribution of the trigeminal nerve. The prevalence of trigeminal neuralgia in the general population is 0.015%.[1] Trigeminal neuralgia is also known as Tic Douloureux and occur most frequently in patients over 50 years of age.[2] Characterized by unilateral sharp, electric shock like facial pain, lasting for brief period of seconds to 1 minute.[3] Facial pain has a considerable impact on quality of life.[4,5] Trigeminal neuralgia is uncommon in young adults. Presentation in children is rare. It is more common in females than males.[6] The right side is more frequently involved.[7] Trigeminal neuralgia may involve one or more branches of the trigeminal nerve with the maxillary and mandibular branch involved mostly, and the ophthalmic branch is the least affected.[8] Attacks of trigeminal neuralgia are usually initiated by mild mucocutaneous stimulation in the territory of the affected trigeminal nerve, called the trigger zone.[9]

Material and Methods:

The study was conducted on neuro-surgeons and oral maxillo-facial surgeons that have en-

Table-1: Showing the number of participants, neurosurgeon, and oral maxillofacial surgeons with their practical experience

Variables	OMFS	OMFS%	NS	NS%	P-value
Number of practitoners	58		52		
Private practitoners	17	29.3	23	44.2	0.10
Institute	41	70.6	29	55.7	
Years of experience					
Less than 5 years	13	22.4	12	23	
Between 5 and 10 years	29	50	25	48	0.041
More than 10 years	16	27.5	15	28.8	
Patients encountered in 30 days					
Less than 5	18	31	09	17.3	0.10
Between 5 and 10	32	55.1	29	55.7	
More than 10	08	13.7	14	26.9	

Table-2: Showing number of refractory patients and commonly perform investigations

Variables	OMFS	OMFS%	NS	NS%	P-value
No of Refractory patients					
Less than 5	29	50	10	19.2	
Between 5 and 10	16	27.5	27	51.9	0.002
More than 10	13	22.4	15	28.8	
Investigations used previously					
Plain radiographs	39	67.2	07	13.5	<0.001
Special radiographs	07	12	23	44.2	
Lab tests	12	20.6	22	42.3	

Table-3: Showing the treatment which was used previously

Variables	OMFS	OMFS%	NS	NS%	P-value
Treatment used previously					
Pharmacological	37	63.8	28	53.8	
Percutaneous injections	18	31	20	38.5	0.557
Open surgery/Radio frequency gamma knife	03	5.2	04	7.7	
Number of new patients					
Less than 5	27	46.6	24	46.1	0.963
Between 5 and 10	20	34.5	19	36.5	
More than 10	11	18.9	09	17.3	

Table-4: Showing the involvement of commonly involved branch of trigeminal nerve

Variables	OMFS	OMFS%	NS	NS%	P-value
Most commonly encountered branch of trigeminal nerve					
Infraorbital branch	11	18.9	26	50	
Maxillary branch	22	37.9	15	28.8	0.001
Mandibular branch	25	43.1	11	21.2	
Most commonly encountered etiological factor					
Primary	41	70.7	13	25	0.963
Secondary	17	29.3	39	75	

countered trigeminal neuralgia in their practices of Sindh, Pakistan. This cross-sectional study included 110 participants out of which 58 were oral maxillofacial surgeons while 52 were neuro surgeons. A self-administered, close ended questionnaire comprising of 18 questions was distributed among the participants. The questionnaire was distributed to 126 practitioners of which 110 participants responded to the questionnaire. The questionnaire comprised of questions like the number of new and refractory patients encountered by the clinicians. The surgeons were asked about the method of diagnosis and investigations they preferred. The type of treatment recommended by them that is either medical or surgical was inquired. The drug of choice of neuro-surgeons and oral maxillo-facial surgeons to treat patients with trigeminal neuralgia was evaluated too. The sample size was calculated using open epi software. Chi-Square test was used to calculate the p-value and p-value < 0.05 was considered as significant.

Results:

Among 110 participants out of which 58 were oral maxillo-facial surgeons while 52 were neuro -surgeons.

Discussion:

Trigeminal neuralgia is a condition that is well known for its impact upon decreased quality of life and negative impact upon productivity potential.[10]

Pharmacological therapy is getting more attention as a treatment option for trigeminal neuralgia. According to the European federation of neurological societies guidelines on neuropathic pain assessment and American academy of neurological guidelines) patient who are refractory to medical treatment compromising at least two adequately dosed drug including carbamazepine should be considered for surgical intervention.[11]

Comparing the present results with those obtained from the medical literature is not straight forward. Studies tend to vary in design, patient selection, follow up period, definition of operative success and presentation of long term effi-

Table-5: Showing recommended diagnostic tool and investigations

Variables	OMFS	OMFS%	NS	NS%	P-value
Recommended Diagnostic tool					
History	28	48.3	17	32.7	
Clinical	18	31	08	15.4	0.002
Investigations	12	20.7	27	51.9	
Recommended Investigations					
Plain radiographs	35	60.3	06	11.5	< 0.001
Special radiographs	11	18.9	31	59.6	
Lab tests	12	20.7	15	28.8	

Table-6: Showing recommended medication for induction therapy

Variables	OMFS	OMFS%	NS	NS%	P-value
Recommend medication for induction therapy					
Carbamazepine	33	56.9	13	25	
Gabapentin	15	25.9	28	53.8	0.002
Phenytoin/Lamotrigine	10	17.2	11	21.2	
Recommendation of basic lab tests before prescribing anti epileptics					
Yes	19	32.8	35	67.3	< 0.001
No	39	67.2	17	32.7	

Table-7: Showing experience of the surgeons with peripheral injections and link of trigeminal neuralgia with tooth extractions

Variables	OMFS	OMFS%	NS	NS%	P-value
Experience with peripheral injections					
Yes	37	63.8	37	71.2	0.411
no	21	36.2	15	28.8	
Link between extraction of a tooth and TN neuralgia					
Yes	49	84.5	37	71.2	0.091
no	09	15.5	15	28.8	

cacy.[12]

Most common pharmacological treatment used by oral maxillo-facial surgeons for trigeminal neuralgia is carbamazepine. Recommended investigation for trigeminal neuralgia by oral maxillo-facial surgeons is plain radiograph (60.3) and by neuro-surgeons is special radiograph (59.6).

Conclusion:

The management of trigeminal neuralgia is a challenge both for neuro-surgeons and oral maxillofacial surgeons. The lack of a full comprehension of the complex patho-genesis at the basis of trigeminal neuralgia remains a key factor. Based on the study, a conclusion can be drawn stating the need of continuous research and progression in the management of trigeminal neuralgia for a better quality of life.

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Dr Batool S Vazir, supervisor, proof reading, statistical analysis, article writing, and data collection.

Dr Tahera Ayub, topic selection, data collection and statistical analysis

Dr Sabeen Masood, article writing, discussion, layout of the article and collection of references.

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