

Access to pain medicines and follow-up consultation after radiofrequency ablation for trigeminal neuralgia during the COVID-19 pandemic

ABSTRACT

Background: In the recent coronavirus disease 2019 (COVID-19) pandemic, follow-up of patients with trigeminal neuralgia post radio-frequency ablation (RFA) of the Gasserian ganglion was restricted because of closure of pain clinic services (PCSs) at our institution, travel restrictions, and fear of contracting COVID-19 infection by hospital visit. Periodic follow-ups are a must in this group of patients. Because the access to pain medications and consultations remained restricted, we tried identifying the factors predisposing to these difficulties in patients.

Methods: We had contacted patients telephonically, who underwent RFA at our institution in the past 5 years as the PCS had not re-started to follow up with in-person consultation. Demographics, socio-economic factors, clinical factors, literacy status, distance to the health care system, and current health status were noted. Collected data were analyzed descriptively, and correlations were calculated between the predictors for difficulty in follow-up to access the medications and consultations.

Results: Out of 121 patients who underwent RFA in the past 5 years, 73 were accessible on phone. Of these, 42.46% (31/73) patients had difficulty in accessing either medications or consultation. The literacy status of the patient was the strongest predictor (0.044) with a negative correlation (-1.216). Difficulty in accessing PCS was associated with a poor health status (p=0.032) and higher pain scores (0.066).

Conclusion: Along with the clinical factors, we have to overlook other factors in predicting difficulty to access PCS in trigeminal neuralgia patients post the RFA status. Difficulty in access to pain medicines and/or consultations was associated with a poor health status and higher pain scores.

Key words: COVID-19, difficulty, pain clinic, radio-frequency ablation, trigeminal neuralgia

Introduction

Background and rationale for the study: The recent coronavirus disease 2019 (COVID-19) pandemic resulted in

significant difficulties for patients seeking access to health care for both COVID-19 and other health issues. Frequent

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SHWETHASHRI KONDAVAGILU RAMAPRASANNAKUMAR, NUPUR KARAN¹, NUPUR PRUTHI², SRIGANESH KAMATH

Departments of Neuroanaesthesia and Neurocritical Care and ²Neurosurgery, National Institute of Mental Health and Neurosciences, Bengaluru, Karnataka, ¹Department of Anaesthesiology, Kalinga Institute of Medical Sciences, Bhubaneswar, Odisha, India

Address for correspondence: Dr. Shwethashri Kondavagilu Ramaprasannakumar, Department of Neuroanaesthesia and Neurocritical Care, Faculty Block, National Institute of Mental Health and Neurosciences, Bengaluru - 560 029, Karnataka, India.
E-mail: Shwethashri.84@gmail.com

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lockdowns restricting human movement, diversion of health care resources (men, material, and money) toward COVID-19 management, and limitation of medical services to emergencies during the pandemic resulted in challenges in availing health care for patients with chronic medical problems.^[1,2] Patients with chronic pain require regular follow-up consultation and unrestricted, timely access to prescribed pain medicines for maintaining a pain-free, healthy life.^[3] However, it is likely that these patients might have faced significant difficulty in availing health care services during the pandemic, although data regarding this in Indian context are lacking.

Patients with chronic pain from trigeminal neuralgia (TN) often undergo radio-frequency ablation (RFA) of the Gasserian ganglion for pain relief.^[4] Periodic follow-up assessments after RFA treatment are essential to assess effectiveness of therapy, identify procedure-related complications, evaluate quality of life, modify pain medications, and manage recurrence of pain if any. However, out-patient pain management clinical services remained closed for several months during the COVID-19 pandemic at several hospitals including our hospital. The recent recommendations for chronic pain during the COVID-19 pandemic suggests TN as a semi-urgent condition^[5] requiring follow-up consultations. Hence, this study was planned to understand the living experiences of people with TN pain during the COVID-19 pandemic after therapeutic intervention with RFA.

Aims and objectives: The objective of this study was to ascertain the prevalence of difficulty in accessing prescribed pain medicines and availing follow-up pain consultations during the COVID-19 pandemic after RFA for TN. Our secondary objectives were to identify potential factors that contribute to difficulty in accessing pain medicines and consultations and impacts of such difficulty on pain severity and health status.

Methods

Study design and participants

This single-center study was conducted at an academic tertiary care neurosciences hospital in southern India. Approval was obtained from the institute's ethics committee, and the need for informed consent was waived off. We included all consecutive patients who underwent RFA for TN during the 5-year period before the beginning of the COVID-19 pandemic from April 2015 to December 2019. We excluded patients who underwent other forms of treatment such as micro-vascular decompression, gamma knife radiosurgery, or pharmacological management.

Data collection

We collected data regarding demographic details (age, gender), socio-economic status, literacy level, place of residence (rural or urban) and state, and distance from home to our health care facility from the patient's physical and electronic medical records. The distance from the place of residence to our pain clinic facility was calculated using Google maps. The data regarding current pain severity and health status after RFA were obtained through a telephonic interview. The current pain severity reported by the patients was assessed using the numerical rating scale (NRS), graded from 0 = no pain to 10 = worst pain. The current health status was graded by the patients on a 5-point Likert scale, from 1 to 5 (1 = excellent, 2 = very good, 3 = good, 4 = fair, 5 = poor). Based on previous studies^[6-8] and our experience during the pandemic, we a priori hypothesized that 1) elderly patients, 2) illiterate individuals, 3) those belonging to a lower economic status [below poverty line (BPL) card holders], 4) females, 5) those from rural domicile, 6) those staying at a farther distance from the hospital where treatment was provided, and 7) individuals from outside the state (Karnataka) are likely to have more difficulty in accessing pain consultations and prescribed pain medicines during the COVID-19 pandemic. We made a maximum of three attempts, 1 week apart, for telephonic interviews to contact the patients who underwent RFA during the 5-year study period.

Outcome measures

Our outcome measures were the subjective sense of difficulty in availing health care services for follow-up consultation at our pain clinic and difficulty in access to prescribed pain medicines for TN during the COVID-19 pandemic. These were assessed by asking the following questions: "Did you have difficulty in accessing pain consultation at our hospital during the COVID-19 pandemic? Did you face difficulty in obtaining prescribed pain medicines during the COVID-19 pandemic?" If the response to either of these questions was a 'yes', it was considered as a definitive difficulty. During the telephonic interview, we also assessed the impact of difficulty in accessing pain medicines and consultations on the patient's current pain severity and health status.

Statistical analysis

We did not perform a formal sample size calculation as this was an exploratory study involving challenges manifested during a rapidly emerging COVID-19 pandemic situation. We extracted the data using a Google form during the telephonic interview. The data obtained were then extracted offline on Microsoft Excel version 2010 spreadsheets and analyzed using SPSS Statistics version 22 (IBM Corp, Armonk, NY, USA). Kolmogorov-Smirnov test was used to assess the normality of data distribution, and the data were expressed as

median ± standard deviation or frequency and percentages, as appropriate. For the purpose of analysis, we categorized our study outcomes as difficulty in access to follow-up consultation and/or prescribed pain medicines. Association between difficulty in access and pertinent variables was conducted using binary logistic regression. Multi-variable binary regression analysis was performed for the predictors with significance values less than 0.2 on univariate analysis. A $p < 0.05$ was considered statistically significant for the predictor model. The results of regression models are presented as odds ratios (OR) with their 95% confidence intervals (CI).

Results

The pain management clinic at our hospital remained closed intermittently for elective consultations during the period from March 2020 to January 2021 because of lockdowns, diversion of hospital services to COVID-19 care and emergencies, and closure/restriction of special clinics of the out-patient services. Once the vaccine was available in January 2021, pain clinic services were provided without interruptions either physically or via telephonic consultations. One hundred and twenty-one patients underwent RFA for TN during the period from April 2015 to December 2019. Of these, 73 patients were available for telephonic interviews that were conducted in the months of December 2020 and January 2021. Each telephonic interview lasted for 20–25 minutes. Figure 1 demonstrates the flow of the patients into the study.

The mean age of our study population was 57.90 ± 11.21 years. Among 73 patients, 35 (47.9%) were males and 38 (52.1%) were females. Of these, there were 14 men (40%) and 21 women (55.3%) were senior citizens (age >60 years).

Difficulty in accessing the follow-up consultations or in availing pain medications was reported by 42.46% (31/73) of the contactable patients. In this contactable group of

patients, it was observed that the difficulty in availing pain consultation was more (42.46%, $n = 31/73$) in comparison to the difficulty in availing prescribed pain medicines (35.61%, $n = 26/73$). Factors associated with difficulty in access to pain clinic consultation and/or prescribed pain medications during the COVID-19 pandemic on univariate analysis are provided in Table 1. Despite several barriers, no significant difficulty was reported by patients residing outside Karnataka and at a farther distance from our hospital. More than a third (38.6%, $n = 28/73$) of our patients were from outside the state, of which only nine patients reported difficulty in access. Patients from the rural background and BPL category also did not report significant difficulty in accessing pain clinic consultations and/or procuring pain medications.

Among the factors that we assessed for predicting difficulty in accessing pain medicines or consultation, only literacy was associated with difficulty ($p = 0.044$, OR = 0.227, 95% CI 0.054 to 0.961), with illiterate patients reporting lesser difficulty than literate patients [Table 2]. No other pre-hypothesized factors were associated with difficulty.

Patients having difficulty in access to pain medicines and/or follow-up consultations had a poorer health status and higher pain scores than those without difficulty at the time of telephonic interview [Table 3].

Table 1: Factors associated with difficulty in access to pain clinic consultation and prescribed pain medications during the COVID-19 pandemic

Variable	Difficulty in access (n=31)	No difficulty in access (n=42)	Significance P
Age (years)			
>60 (n=35)	12 (34.3%)	23 (65.7%)	0.175
≤60 (n=38)	19 (50%)	19 (50%)	
Gender distribution			
Females (n=38)	13 (34.2%)	25 (65.8%)	0.137
Males (n=35)	18 (51.4%)	17 (48.6%)	
Literacy status			
Literate (n=55)	27 (49.1%)	28 (50.9%)	0.045
Illiterate (n=18)	4 (22.2%)	14 (77.8%)	
Income status			
BPL (n=20)	11 (55%)	9 (45%)	0.183
APL (n=53)	20 (37.7%)	33 (62.3%)	
Rural domicile			
Yes (n=35)	18 (51.4%)	17 (48.6%)	0.137
No (n=38)	13 (34.2%)	25 (65.8%)	
State of residence			
Karnataka (n=45)	22 (48.9%)	23 (51.1%)	0.159
Outside Karnataka (n=28)	9 (32.1%)	19 (67.9%)	
Distance from home to hospital (km)			
<100	17 (48.6%)	18 (51.4%)	0.283
100-500	6 (30%)	14 (70%)	
500-1000	5 (62.5%)	3 (37.5%)	
>1000	3 (30%)	7 (70%)	

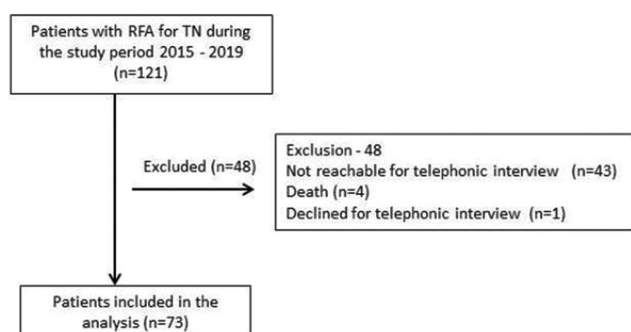


Figure 1: Flow diagram depicting the flow of the patients into the study

Discussion

Summary of findings

We observed that a significant proportion of patients (43%) treated with RFA for their TN had challenges with regard to access to pain consultation and/or pain medicines during the COVID-19 pandemic. Pharmacies were excluded from lockdown closures and were available closer to the place of residence. This might explain the lower level of difficulty reported in obtaining pain medicines (36%) than accessing pain clinic services (43%). There was uncertainty about the status of out-patient services during the pandemic including pain clinics, the availability of transport to travel to and from their home, and access to food and travel passes, which probably explains why more persons reported difficulty in availing follow-up pain consultations. However, the difficulty regarding access to pain medicines was still high, probably because of relatively reduced stocks of neuropathic pain medicines at pharmacies during the pandemic as the demand for COVID-19-related drugs was high.

In contrast to our hypothesis, we observed that higher literacy was associated with greater difficulty in accessing pain medicines or consultations. Among 31 persons who had difficulty, 27 were literate and four were illiterate. This paradoxical finding might be a reflection of literate people being more vocal about their difficulties while illiterate being more accepting of the situation. However, patients with difficulty in access to consultation or pain medicines

had a significantly poorer quality of health ($p = 0.03$) and had higher pain scores, although this difference was not statistically significant.

Comparison with the previous literature

In a study involving 220 chronic care patients, 44% reported at least one barrier to accessing health care services with 20% reporting the lack of access to medications and 16.8% reporting skipping of clinical appointments. Cancer patients and homes far away from the health care facility experienced a barrier to health care access.^[9] A recent systematic review demonstrated a decrease in health care utilization by about a third during the COVID-19 pandemic, with greater reductions in patients with less severe illness.^[2] In a study involving 101 patients with chronic pain, three out of four reported that their quality of life has been affected moderately or severely.^[10] In comparison, only 12.3% ($n = 9$) reported a poor health status in our study, of which 7 patients (77.2%) had difficulty in accessing the pain clinic services or pain medicines.

According to a survey performed by the Center for Monitoring the Indian Economy (CMIE), around 44% of the households reported a loss in income during the COVID-19 pandemic.^[11] Economic disparities and the lack of health insurance are shown to significantly affect utilization of health care resources. Financial loss was acute and severe with sudden lockdown, job losses, the lack of work, and so on, following the onset of the COVID-19 pandemic for many individuals including patients with chronic pain. Hence, it was expected that BPL patients will be more severely affected financially, resulting in difficulty in access to pain medicines and transport for follow-up consultation. However, we did not find financial status as a contributing factor for the lack of access to medicines or consultation in our study.

We assessed age as a probable factor for difficulty in accessing health care and medical consultation during the pandemic. In a study from Bangladesh involving older individuals with non-communicable chronic conditions, it was observed that 23% had difficulties accessing medicines and 27%

Table 2: Results of multi-variable logistic regression analysis of factors predicting difficulty in access to pain consultation or medicines during the COVID-19 pandemic

Variable	P	Odds Ratio	95% Confidence Interval- Lower	95% Confidence Interval- Upper
Age	0.915	0.941	0.308	2.879
Gender distribution	0.645	1.282	0.446	3.686
Literacy status	0.044	0.227	0.054	0.961
Income status	0.539	1.501	0.411	5.481
Rural Background	0.079	0.344	0.105	1.130
State of residence	0.755	0.206	0.660	6.857

Table 3: Impact of difficulty in access to pain medicines and follow-up consultation during the pandemic on pain scores and health status

Variable	Univariate analysis		P	Multi-variate analysis			
	Difficulty in access (n=31)	No difficulty in access (n=42)		Odds Ratio	95% CI- Lower	95% CI-Upper	P
Health status			0.032	4.808	0.890	25.986	0.068
Likert 1-2 (n=64)	24 (37.5%)	40 (62.5%)					
Likert 3-5 (n=9)	7 (77.8%)	2 (22.2%)					
Pain score			0.066	2.424	0.681	8.635	0.172
NRS 0-3 (n=59)	22 (37.3%)	37 (62.7%)					
NRS 4-10 (n=14)	9 (64.3%)	5 (35.7%)					

had difficulty in receiving routine medical care during the COVID-19 pandemic.^[12] The senior citizens in our study did not report difficulty in access to either pain consultation or pain medicines.

Previous studies have documented gender as a barrier for access to health care.^[13] There was no difference between the two genders with regard to difficulty in availing pain medicine or consultations in our study.

Illiteracy is a known barrier for access to health care. These patients also have poorer control of their chronic illnesses.^[14] Therefore, we had hypothesized that illiterate people are more likely to have challenges in accessing pain medicines and consultations. However, we observed that this was not true with more literates reporting difficulty in accessing pain consultations or medicines during COVID-19.

Our findings are in line with previous studies that noted difficulties in accessing pain medicine or availing pain consultations during the COVID-19 pandemic. A survey published by Conor Stewart revealed that 48% of chronic pain sufferers from Italy reported difficulty in accessing medications during the pandemic.^[15] Another survey of 1453 patients with chronic pain revealed postponement or cancellation of appointments for chronic pain treatment with a sizable proportion of participants expressing concerns regarding difficulty in accessing prescription opioids because of COVID-19.^[16]

The challenges faced by chronic pain physicians in delivery of services to their patients and the importance of telemedicine in the management of patients with chronic pain during the COVID-19 pandemic were recently highlighted in the Indian context.^[17] A review by El-Tallawy described the challenges in chronic pain management during the COVID-19 times and provided suggestions for utilization of available resources.^[18] Similarly, another review analyzed the impact of the COVID-19 pandemic on chronic pain management and highlighted the need for changing strategies to care for patients with chronic pain, especially using tele-health services.^[19]

Effect of findings of our study

These patient interviews provided our patients with a sense of comfort and continuity in follow-ups and guidance on pain medicines apart from providing Indian data regarding difficulties faced by patients with TN during the COVID-19 pandemic. The findings of this study resulted in initiation of hybrid services, tele-consultation for follow-up of patients with TN who could not attend physical consultations, and also re-starting of the physical pain clinic services for those who wished to visit from February 2021 before full resumption

of all hospital services. Pain clinic services continued to be available during the rest of the pandemic except for a short duration during the peak of the second wave in April–May 2021.

Strengths and limitations

To the best of our knowledge, this is the first study reporting on the difficulty in access to pain consultation or prescription medicines during the COVID-19 pandemic in patients with TN from India. We also studied potential factors contributing to difficulty in access and impacts of such difficulty on the health status and pain severity. Our study findings resulted in early resumption of services for patients with chronic pain despite the pandemic.

Our study has certain important limitations. The sample studied was small. Second, only 60.3% (73/121) of the patients with TN who underwent RFA were available for the telephonic interviews. It is possible that those who could not be contacted could provide different responses. Hence, the findings may not be valid for the entire sample. Other limitations are the lack of in-person assessments (we performed telephonic interviews), single time point of assessment between first and second COVID-19 waves, subjective nature of reporting difficulty based on the individual patient's understanding and perception, and a very specific chronic pain population of TN who underwent RFA during the 5-year period before the COVID-19 pandemic. Last, our findings may not be generalizable to other settings where COVID-19-associated restrictions and health care facilities were dissimilar.

Conclusions

A significant proportion of patients who underwent RFA for their TN pain suffered difficulty in access to pain consultation and/or medicines during the COVID-19 pandemic. Literate persons had greater difficulty in access to pain medicines or consultations. Difficulty in access to pain medicines and/or consultations was associated with a poor health status and higher pain scores.

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Conflicts of interest

There are no conflicts of interest.

References

1. Hebbar PB, Sudha A, Dsouza V, Chilgod L, Amin A. Healthcare delivery in India amid the Covid-19 pandemic: Challenges and opportunities. *Indian J Med Ethics* 2020;1-4. doi: 10.20529/IJME.2020.064.

2. Moynihan R, Sanders S, Michaleff ZA, Scott AM, Clark J, To EJ, *et al.* Impact of COVID-19 pandemic on utilisation of healthcare services: A systematic review. *BMJ Open* 2021;11:e045343.
3. Dueñas M, Ojeda B, Salazar A, Mico JA, Failde I. A review of chronic pain impact on patients, their social environment and the health care system. *J Pain Res* 2016;9:457-67.
4. Emril DR, Ho KY. Treatment of trigeminal neuralgia: Role of radiofrequency ablation. *J Pain Res* 2010;3:249-54.
5. Shantanna H, Cohen S, Strand N, Lobo C, Eldabe S, Bhatia A, *et al.* Recommendations on chronic pain practice during the COVID-19 pandemic. A Joint statement by American Society of Regional Anesthesia and Pain Medicine (ASRA) and European Society of Regional Anesthesia and Pain Therapy (ESRA). March 2020.
6. Fitzpatrick AL, Powe NR, Cooper LS, Ives DG, Robbins JA. Barriers to health care access among the elderly and who perceives them. *Am J Public Health* 2004;94:1788-94.
7. Barik D, Thorat A. Issues of unequal access to public health in India. *Front Public Health* 2015;3:245.
8. Kasthuri A. Challenges to healthcare in India-The five A's. *Indian J Community Med* 2018;43:141-3.
9. Nshimiyiryo A, Barnhart DA, Cubaka VK, Dusengimana JM, Dusabeyezu S, Ndagijimana D, *et al.* Barriers and coping mechanisms to accessing healthcare during the COVID-19 lockdown: A cross-sectional survey among patients with chronic diseases in rural Rwanda. *BMC Public Health* 2021;21:704.
10. Smyrnioti ME, Lyrakos G, Meindani M, Matsota P, Kostopanagiotou G, Batistaki C. The impact of the first wave of the COVID-19 pandemic on patients' perceptions of chronic pain. *J Pain Res* 2021;14:2571-81.
11. Shadmi E, Chen Y, Dourado I, Faran-Perach I, Furler J, Hangoma P, *et al.* Health equity and COVID-19: Global perspectives. *Int J Equity Health* 2020;19:104.
12. Mistry SK, Ali AR, Yadav UN, Ghimire S, Hossain MB, Das Shuvo S, *et al.* Older adults with non-communicable chronic conditions and their health care access amid COVID-19 pandemic in Bangladesh: Findings from a cross-sectional study. *PLoS One* 2021;16:e0255534.
13. Kapoor M, Agarwal D, Ravi S, Roy A, Subramanian V, Guleria R. Missing female patients: An observational analysis of sex ratio among outpatients in a referral tertiary care public hospital in India. *BMJ Open* 2019;9:e026850.
14. DeWalt DA, Berkman ND, Sheridan S, Lohr KN, Pignone MP. Literacy and health outcomes: A systematic review of the literature. *J Gen Intern Med* 2004;19:1228-39.
15. Stewart C. Available from: <https://www.statista.com/statistics/1256081/medicine-access-for-pain-sufferers-during-pandemic-in-europe>. [Last accessed on 2021 Aug 17].
16. Mun CJ, Campbell CM, McGill LS, Aaron RV. The early impact of covid-19 on chronic pain: A cross-sectional investigation of a large online sample of individuals with chronic pain in the United States, April to May, 2020. *Pain Med* 2021;22:470-80.
17. Ghai B, Malhotra N, Bajwa SJ. Telemedicine for chronic pain management during COVID-19 pandemic. *Indian J Anaesth* 2020;64:456-62.
18. El-Tallawy SN, Nalamasu R, Pergolizzi JV, Gharibo C. Pain management during the covid-19 pandemic. *Pain Ther* 2020;9:453-66.
19. Puntillo F, Giglio M, Brienza N, Viswanath O, Urits I, Kaye AD, *et al.* Impact of COVID-19 pandemic on chronic pain management: Looking for the best way to deliver care. *Best Pract Res Clin Anaesthesiol* 2020;34:529-37.