



## Awareness of herpetic neuritis among dental practitioners

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### ABSTRACT

Herpetic neuritis is indeed a painful infection that damages both the nerve fibers as well as the skin. This is a shingles side effect. It is also the resurgence of varicella-zoster virus, or chickenpox virus, that has been latent in the sensory root ganglia of the neural system from early life. The purpose of the survey was for determining the knowledge, awareness and management practices of herpetic neuritis in a dental clinical setup among dental practitioners. A total of 100 dental practitioners were randomly enrolled in the study and voluntarily completed a questionnaire consisting of 10 close-ended questions. The questionnaire consists of questions based on demographic characteristics, knowledge on risk factors, causes, signs and symptoms, various diagnostic aids, management of herpetic neuritis etc. Questionnaire data was gathered by sharing the survey planet link to the selected population. Data were entered in Microsoft Excel sheets and statistically analysed. Around 99% of dental practitioners are aware of symptoms of herpetic neuritis. Almost all the dental practitioners attended the survey are aware of the various risk factors of herpetic neuritis and its most important and common diagnostic factor. About 91.1% of the population are aware of the primary prevention of herpetic neuritis about 96% of the participants were aware of the various diagnostic aids and management practices of herpetic neuritis patients and implement them in their clinical practice. The knowledge and awareness among dentists about herpetic neuritis patients in a clinical setup are adequate and some of the dentists had a negative attitude towards the management practices. Organising seminars and additional classes about herpetic neuritis and its management protocol may help to gain more knowledge about the disease.



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### INTRODUCTION

Herpetic neuritis is among the most severe, chronic and acute diseases affecting the human race. This is a significant health issue and is a recurrence of the varicella-zoster virus (Johnson, 2010). The effect of the varicella vaccine also an eventual manifestation of such an infection has yet to be identified. Acute herpes zoster neuritis is thought to have been the resurgence of the varicella-zoster virus or chickenpox virus, that has been latent in the sensory root ganglia of the neural system since early life (Johnson and Whitton, 2004). Herpes zoster is an illness as a result of the lack of age-related innate immunity. As cell-mediated immunity decreases, the virus

grows in the dorsal root ganglion, which induces a severe inflammatory reaction to ganglions (Guenther, 2006; Nalamachu and Morley-Forster, 2012). The virus gradually enters the sensory root and passes through the nerve, ultimately entering the skin with one or, sometimes, two dermatomes, and producing a normal blister rash and vesicles such that the diagnosis appears self-evident.

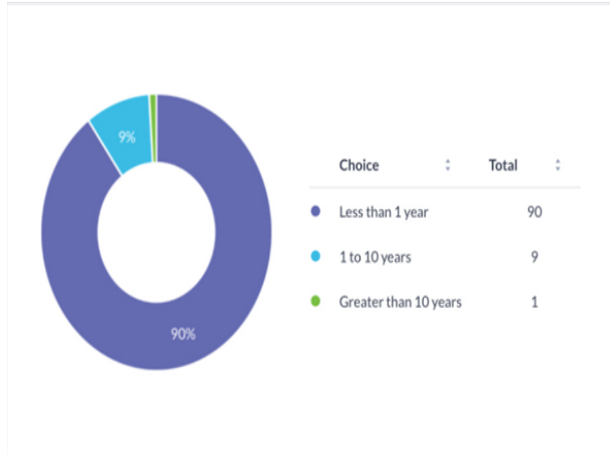


Chart 1: shows the responses for the Experience in dental practice

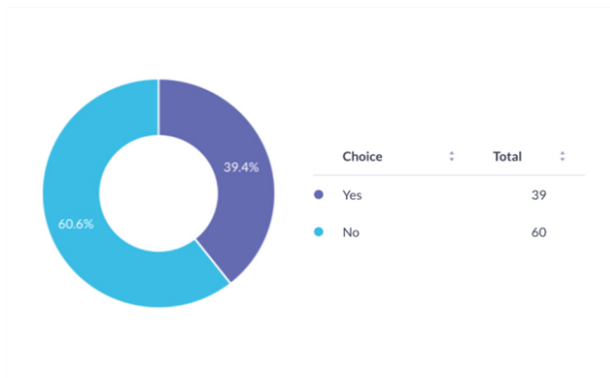


Chart 2: shows the responses for the question whether they had treated patients with herpetic neuritis

The disorder is definitely more frequent in people with immune deficiency, including AIDS, lymphoma, leukaemia, high-dose corticosteroids, or immunodeficiency due to cancer therapy. Typically, when the virus has rekindled, the immune reaction comprises one or two dermatomes and, if widespread diffusion occurs, indicates a significant deficiency in the immune system. Most clinicians believe that only the emergence of herpes zoster in the younger population merits an examination of esoteric malignancy and perhaps other issues with cell-mediated immunity (Sampathkumar *et al.*, 2009). The most serious complication is postherpetic neuralgia, which

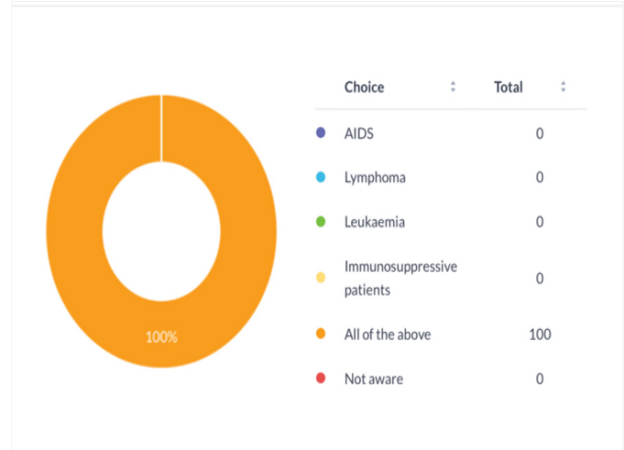


Chart 3: shows the responses for the question that do they know in which patients is the herpetic neuritis is more common.



Chart 4: shows the responses for the question are they aware of symptoms of herpetic neuritis

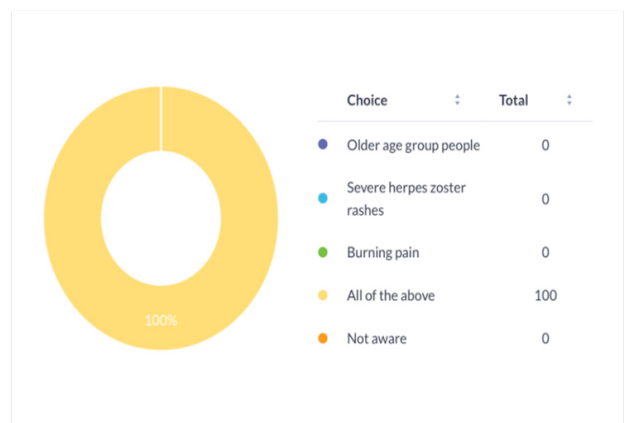


Chart 5: shows the responses for the question that are they aware of Risk factors of herpetic neuritis?

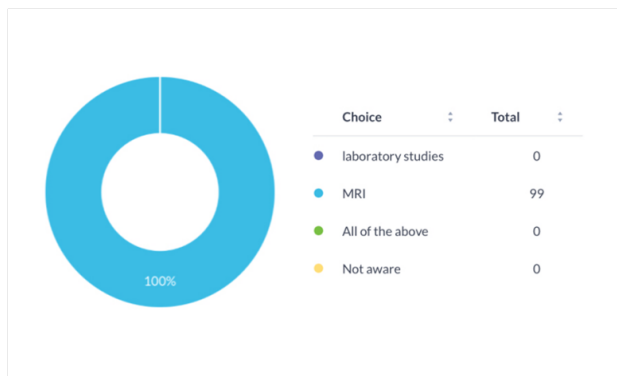


Chart 6: shows the responses for the question that are they aware of the Most important diagnostic method

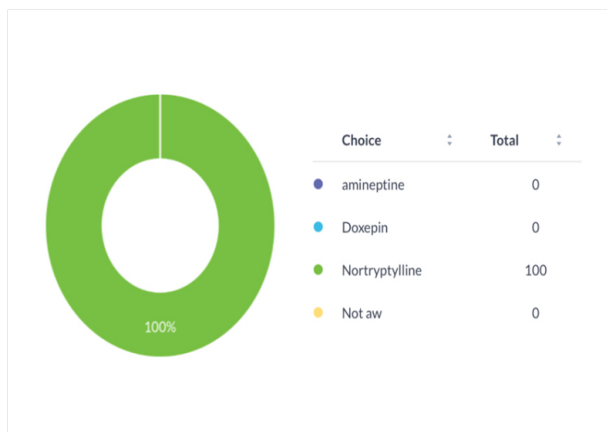


Chart 9: shows the responses for the question that are they aware of the Tricyclic antidepressants which are effective in reduction of pain caused by herpetic neuritis

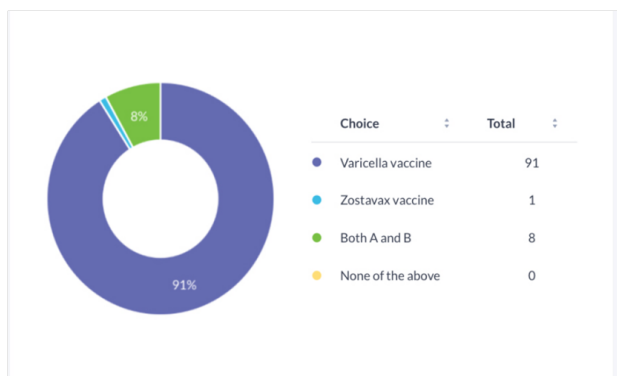


Chart 7: shows the responses for the question Primary prevention of herpetic neuritis done by

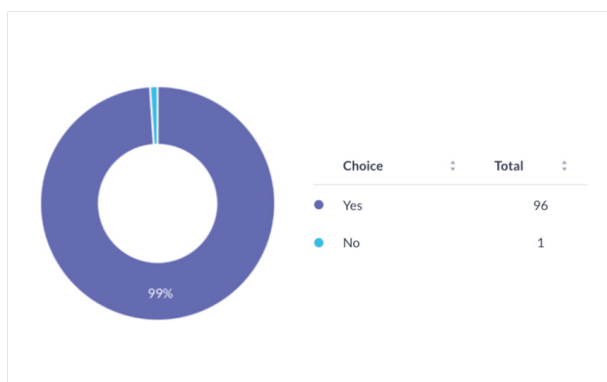


Chart 10: shows the responses for the question that do they think awareness on herpetic neuritis is important

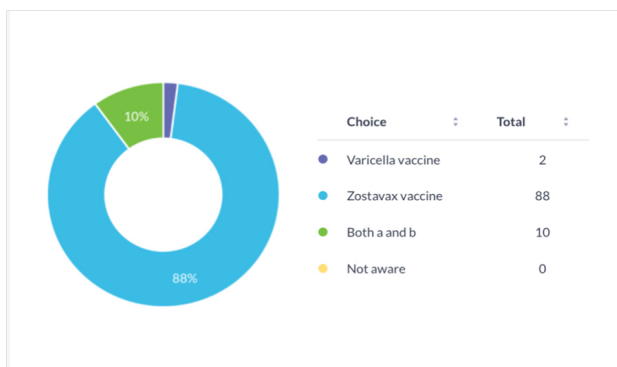


Chart 8: shows the responses for the question that are they aware of Secondary prevention of herpetic neuritis is done by

would be chronic neuropathic pain after the eruption is healed and typically occurs within approximately 3 to 4 weeks.

Acute herpes zoster medications include corticosteroids, antidepressants, antiviral drugs, smallpox vaccine, topical local anaesthesia and capsaicin, and also iontophoresis. In the acute stage of acute herpes zoster neuritis, there appears to be a major sympathetic-mediated portion, and the progression of postherpetic neuralgia reflects the progression of this condition. This aversion to good management is definitely expressed in the high incidence of depression. Early studies indicate that aggressive treatment of acute pain using analgesics, including opioids, may reduce the percentage of patients with postherpetic neuralgia. With the production of antiviral drugs such as acyclovir, famciclovir, etc., it was expected that there would be important effect on the number of patients with herpes neuritis (Jeon, 2015).

Consequently, a general dentist relies on the further purpose of providing follow-up in the treatment of the patient's eventual oral health. It is therefore essential to have knowledge of herpetic neuritis. The purpose of the survey was for determining the knowledge, awareness and management practices of herpetic neuritis in a dental clinical setup among dental practitioners.

## MATERIALS AND METHODS

This study was conducted as a descriptive survey based on the awareness of herpetic neuritis among dental practitioners with the help of survey planet. A cross-sectional study was conducted during January 2020, among dental practitioners in Chennai. The questionnaire was pre-tested, revised and retested before use.

A total of 100 dental practitioners were randomly enrolled in the study and voluntarily completed a questionnaire consisting of 10 close-ended questions. The questionnaire consists of questions based on demographic characteristics, knowledge on risk factors, causes, signs and symptoms, various diagnostic aids, management of herpetic neuritis etc. Questionnaire data was gathered by sharing the survey planet link to the selected population. Data were entered in Microsoft Excel sheets and statistically analysed.

### Questions

1. Experience in dental practice?
- 2.. Have you ever treated patients with herpetic neuritis?
3. Is herpetic neuritis more common in patients with?
4. Symptoms of Herpetic neuritis?
5. Risk factors of herpetic neuritis?
6. The most important diagnostic method?
7. Primary prevention is done by?
8. Secondary prevention is done by?
9. Tricyclic antidepressants which are effective in the reduction of pain caused by herpetic neuritis?
10. Do you think awareness on herpetic neuritis is important?

### Statistical analysis

Questionnaire data was processed in Microsoft Excel sheets and evaluated by statistical software (IBM statistics version 26.0, SPSS INC). The reliability of the data input was checked the corresponding comparison of different datasets.

## RESULTS AND DISCUSSION

Among 100 dental students, 48 males and 52 females filled the questionnaire. Most of the 90% of them had one year of experience in dental practice (Chart 1). About 39.4% of the population had treated patients with herpetic neuritis (Chart 2). Almost the whole population who attended the survey were aware of patients who are frequently affected by herpetic neuritis(Chart 3). Around 99% of dental practitioners are aware of symptoms of herpetic neuritis(Chart 4). Almost all the dental practitioners attended the survey are aware of the various risk factors of herpetic neuritis and its most important and common diagnostic factor(Charts 5 and 6)About 91.1% of the population are aware of the primary prevention of herpetic neuritis(Chart 7). About 88 % of the population are aware of secondary prevention of herpetic neuritis (Chart 8). Almost all of them are aware of nor-triptyline which is used as the most common tricycline antidepressant medications to reduce the pain caused due to herpetic neuritis (Chart 9). Almost 99% of the people think that awareness on herpetic neuritis is important for dental practitioners (Chart 10).

Herpetic neuritis is characterized as inflammation with the incidence of chronic, recurrent, debilitating dermatomal complications in people who may have recovered from shingles. The pain affiliated with the disease may be identified as aching, itching, lancinating, and sharp. In addition, patients with postherpetic neuralgia also experience allodynia, anaesthesia, hyperalgesia, and thermal, sensory, pinprick, or vibratory sensations inside or outside the margins of the impaired dermatomes. Typically, the risk of experiencing chronic extreme pain is relatively small for primary care patients who have resolved from herpes zoster disease (Arvin, 2005).

Herpes zoster is an elderly illness as an example of loss of age-related immune vigilance (Chernev and Dado, 2013; Gauthier *et al.*, 2009). As cell-mediated immunity decreases, the virus grows in the dorsal root ganglion and induces a severe inflammatory response to ganglionitis. The well-defined risk factors for herpes neuritis in patients include older age, the occurrence of prodromal pain, the frequency and intensity of rash, and the intensity of acute herpes zoster pain (Coen *et al.*, 2006). Many less reported risk factors for PHN involve gender, position in the opthalmic division of the trigeminal nerve, increased neurosensory disruption, and mental suffering induced by Jung *et al.* (Jung *et al.*, 2004). Approximately 99 per cent of dental practitioners

are conscious of herpetic neuritis effects. Almost all dental practitioners who participated in the survey are aware of the different risk factors for herpetic neuritis and its most important and specific diagnostic factor.

Diagnostic lab procedures for HZ include polymerase chain reaction (PCR) assay, skin biopsy, immunofluorescence assay, and viral insulation. These methods are important for patients with atypical conditions such as herpes simplex as well as those with contact dermatitis and rash. However, the outcomes of these experiments vary in terms of sensitivity, accuracy and time taken to collect a sample. Consequently, these studies have drawbacks for use in the treatment outcomes of HZ (Volpi *et al.*, 2008).

The primary aim of herpes zoster management is to suppress ongoing viral replication, relieve pain, and avoid complications such as herpes neuritis. HZ treatment involves antiviral agents, analgesics, corticosteroids, and neural blockade. A herpetic neuritis is a form of persistent neuropathic pain. Therefore, while NSAIDs or acetaminophen are not successful, agents for the treatment of neuropathic pain are usually beneficial in the treatment of herpes neuritis. Herpetic neuritis, however, is often resistant to current pharmacological therapies. An integrative analgesic care plan should be put in place to match the effectiveness and tolerability of the drug regimen.

Tricyclic antidepressants (TCAs) such as amitriptyline, nortriptyline and desipramine have shown effectiveness in the reduction of prolonged herpetic neuritis discomfort and therefore should be regarded in patients where traditional analgesic treatment has not been effective in controlling HZ discomfort by Hempenstall *et al.* (Hempenstall *et al.*, 2005). Almost all of the participants are aware of nortriptyline, that is being used as the most effective tricyclic antidepressant drug to alleviate the pain caused by the herpes simplex neuritis. Zostavax against shingles, this vaccine is a more powerful variant of the chickenpox vaccine, as well as research proves that it decreased the risk of shingles of herpetic neuritis (Arani *et al.*, 2001; Oxman *et al.*, 2005).

Such results indicate that vaccinations against VZV could be the first line for the avoidance of herpetic neuritis. About 91.1 per cent of the population is conscious of the primary treatment of herpetic neuritis. Approximately 88 per cent of the population are aware of secondary prevention of herpes neuritis. Almost the entire population claims that knowledge of herpes neuritis is critical to dental practi-

tioners.

## CONCLUSION

From the above findings, we infer that the understanding of herpetic neuritis among dental practitioners is adequate and that some of them have a negative attitude towards the practice of understanding and management practices. Organizing seminars and additional classes on herpetic neuritis and its management protocol may help to gain more information about the disease and this would change their attitude. This could also have an effect on patients' psychological wellbeing and a positive impact on their exposure to dental education, ensure healthy hygiene and nutrition, and avoid these diseases.

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The authors declare that they have no funding support for this study.

## Conflict of Interest

The authors declare that they have no conflict of interest for this study.

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