

FREQUENCY OF XEROSTOMIA IN PATIENTS SUFFERING FROM HEPATITIS B AND C

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ABSTRACT

The objective of the study was to assess the frequency of xerostomia in patients infected with hepatitis B and C presenting to the oral and maxillofacial surgery department of Rawal Institute of Health Sciences, Islamabad from October 2011 to February 2012. It was carried out as a prospective cross sectional study.

All patients who gave the history of being infected with hepatitis B or C were included in the study. They were asked about the sensation of dryness of mouth and then were clinically evaluated for the presence of xerostomia by putting a mirror against the mucosa. Sticking of mirror to the mucosa was taken as a positive result.

38 patients presented to the oral surgery department, out of these, 6 were males and 32 females (1:5.3). Eight (21.1%) had hepatitis B while 30 (78.9%) were suffering from hepatitis C. Xerostomia was seen in 8 (26.7%) patients with hepatitis C. None of the patients with hepatitis B presented with xerostomia. Chi Square test was used to analyze the association of xerostomia with therapy for hepatitis but no statistically significant association was observed ($p>0.05$).

Xerostomia may be a finding in patients with chronic liver disease and treating clinicians should be aware of it and should treat it to improve patients' quality of life.

Key Words: Hepatitis, Xerostomia, Chronic liver disease

INTRODUCTION

Hepatitis refers to inflammation of liver. Chronic hepatitis is mostly viral, bacterial, protozoal, alcoholic or drug induced.¹ Viral hepatitis is caused by seven different viruses namely A, B, C, D, E, F and G.² Chronic hepatitis caused by hepatitis B and C virus is a major health care problem with an estimated worldwide prevalence of hepatitis B to be 2-8%³ and for hepatitis C, this figure is around 3%.⁴ In Pakistan the

estimated prevalence is around 2.11-10% for Hepatitis B⁵ and 3.3-13.5% for Hepatitis C.⁶

Xerostomia refers to subjective sensation of dryness of mouth and can be a symptom of certain diseases or as an adverse effect of certain medications. Important causes of xerostomia include uncontrolled metabolic diseases like diabetes, radio/chemotherapy to the head and neck area, salivary gland disease or psychological factors.⁷ In a normal adult the salivary

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flow rates are 0.3-0.4ml/min (unstimulated) and around 1-2ml/min (stimulated). If these values are below these normal ranges, then the person is referred to as xerostomic.⁸ Xerostomia can be considered as an extra-hepatic manifestation and can be troublesome for patients, as eating and speaking is adversely affected especially in severe cases, and this also renders patients more liable towards development of dental caries.⁹ Very few studies have been carried out so far which have demonstrated that incidence of xerostomia in hepatitis patients to be approximately 0.85-34%.^{10,11}

METHODOLOGY

The study was carried out in the Oral and Maxillo-facial Surgery department of Rawal Institute of Health Sciences, Islamabad from October 2011 to February 2012. All the patients who presented to the department for any surgical procedure and upon inquiring gave the history of being infected with hepatitis B and C. They were included in the study, provided they were willing to participate. They were asked about the time since they were aware of their disease and whether they underwent any treatment for the disease or not.

The patients were inquired about the sensation of dryness in the mouth and clinically they were assessed for dryness by looking at the condition of the oral mucosa, the amount of saliva present in the oral cavity and by placing a mirror on the buccal mucosa. The patients were categorized as positive when they said that they feel their mouths to be dry and on clinical examination, the back of the mirror stuck to the oral mucosa and there was scanty, thick and viscous saliva in the oral cavity. Patients were also inquired about any other metabolic disease they may be suffering from or drugs they may be taking which could contribute towards the development of xerostomia, in order to remove the bias. The data so collected were recorded on a specially designed pro forma.

STATISTICAL ANALYSIS

The results were analyzed using statistical software SPSS version 17.0. Frequency and percentages were calculated for variables like gender, disease status like hepatitis B or C, treatment received and for negative and positive status for xerostomia. Mean was calculated for age and time since infected.

RESULTS

Total 38 patients formed the study group. Out of these, 6 were males and 32 females with a male to female ratio of 1:5.3. The age ranged from 27-60 years (mean 44.8 ± 11.5). Eight patients had hepatitis B (21.1%) while 30 were suffering from hepatitis C (78.9%). Figure 1.

Regarding treatment, 10 (26.3%) patients did not receive any treatment for their disease, 22 (57.9%) had received treatment in the past and 6 (15.8%) were currently undergoing treatment. Out of those who received treatment in the past or were currently undergoing treatment, 16 (42.1%) received interferons, 2 (5.3%) received combined interferon and anti-virals and 10 (26.3%) received herbal treatment. Time since infected ranged from 3-125 months (mean 49.4 ± 33.3).

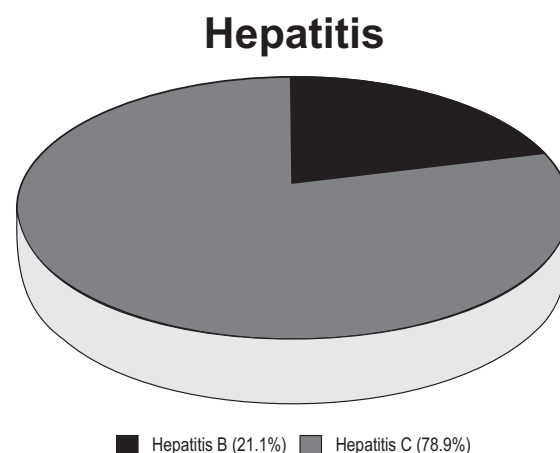


Fig 1 Frequency of Hepatitis B and C

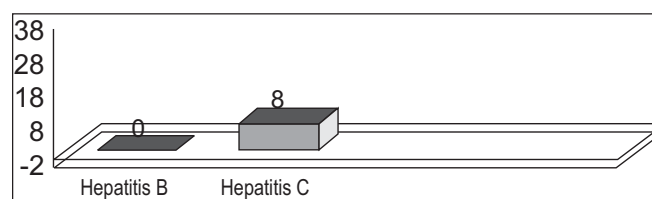


Fig 2: Frequency of xerostomia in Hepatitis B and C patients

TABLE 1: RELATIONSHIP OF XEROSTOMIA WITH TREATMENT MODALITY USED

Treatment received	No of patients	Xerostomia
Interferons (IFN)	16	3
IFN-Antiviral (combined)	2	1
Others (herbal etc)	10	2
No treatment	10	2
Total cases	38	8

Xerostomia was found in 8 (26.7%) patients out of 30 cases of hepatitis C. None of patients with hepatitis B presented with xerostomia (Figure 2). When Chi Square test was used to analyze association of xerostomia with modalities of treatment used, the results were statistically insignificant ($p>0.05$), which shows that xerostomia is not dependent on modality of treatment used for hepatitis.

DISCUSSION

Hepatitis B and C is considered a major health problem and is an even major issue for under developed countries like Pakistan, because of lack of public awareness and ease of disease spread.⁵ The known prevalence of the disease in Pakistan is thought to be up to around 3-10%.^{6,12} Chronic hepatitis (both B and C) is usually treated with pegylated interferons (peg IFN),¹³ nucleoside/nucleotide analogues (NA), combined therapy with peg IFN and NA¹⁴ and herbal¹⁵ or homeopathic treatments¹⁶. All these have shown varying degrees of response with none approaching 100%.

Xerostomia is subjective dryness of oral cavity and can be due to actual decrease in saliva production or only patient perception⁷. Xerostomia can be associated with a variety of diseases and their treatment⁸. There are a few studies which have shown association of xerostomia with chronic hepatitis, this can be due to the disease itself or may be associated with the modality used to treat the disease.^{17,18}

In our study there were 38 patients in total. Out of these only 8 were infected with hepatitis B while the rest 30 were suffering from chronic hepatitis C. The male to female ratio in our study was 1: 5.3 showing that a significantly higher frequency of disease in females which is surprising as most of the studies have demonstrated a higher prevalence of disease in male population.^{5,6,19} The mean age of disease in our set up was 44.8 years and this is in accordance with other similar studies showing the mean age to be around 39-48 years.^{4,12,18}

Regarding the association of xerostomia with hepatitis, in our study only patients with hepatitis C showed signs of xerostomia and its frequency was found to be 26.7%. None of the patient with hepatitis B presented with xerostomia. A recent study done by Grossman et al²⁰ in Brazil has revealed the frequency of xero-

stomia in chronic hepatitis C patients to be around 35.4%.

When the patients were asked about the treatment, 10 patients commented for having no treatment for their disease, 22 were treated in the past and 6 were currently undergoing treatment. Out of the 28 patients who received therapy for their disease, 16 received Interferons, 2 received combined IFN and anti viral therapy while 10 received herbal therapy only. When the association of xerostomia with treatment was analyzed it was seen that there was no statistically significant association. Xerostomia was seen with all the treatment modalities and even in patients who have not been previously treated. One patient, who was not included in the study, had diabetes mellitus (DM) along with hepatitis C and was suffering from dryness of mouth. He was excluded as presence of xerostomia could be a sequel of DM rather than Hepatitis C.

We diagnosed xerostomia on the basis of patient's history and clinical findings of scanty saliva and back of mirror sticking to the mucosa only. Ideally presence of xerostomia should have been measured more objectively with graduated tubes or Crittenden's cups.

CONCLUSION

There can be a positive association between xerostomia and chronic liver disease and all the clinicians who are involved in the treatment of such patients should be on a look out for presence of xerostomia in chronic liver disease patients in order to improve the quality of life in these individuals.

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