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ORIGINAL ARTICLE

The Oral Manifestation of Hepatitis Patients Visiting Tertiary Care Clinics of Karachi

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ABSTRACT

Background: The present study aimed to find out the most frequent Oral lesions in hepatitis B and C patients in the local population and correlate it with age and gender.

Materials and Methods: A retrospective study was designed at Sindh Institute of Oral Health Sciences at the department of Oral medicine. We studied the records of patients coming to OPD from 2016 till 2021 diagnosed with hepatitis B and C for treatment. Convenience sampling was done. Incomplete forms and data of the patients with comorbid conditions such as Diabetes, Rheumatoid Arthritis or Hypertension were removed as a part of the protocol.

Results: Data of sixty-seven patients was included in the study. Data analysis was done through SPSS ver.18. Frequency of the oral lesions in hepatitis B and C was assessed and the relationship between hepatitis and oral lesions was also explored by applying t-test. Male to female ratio was 1: 1.5. The most frequent lesion in both hepatitis B and C was Periodontitis followed by gingivitis and oral lichen planus. Also, the relationship between hepatitis C and oral lesions was significant at the level of p-value of 0.05% while for hepatitis B and effect on the treatment of hepatitis was no significant.

Conclusion: The findings of the study show that the Hepatitis C has a significant relationship with oral lesions and presence of chronic periodontitis or gingivitis and oral lichen planus requires further testing for HCV and HBV status which would result in early diagnosis and treatment decreasing the chances of complications such as liver cirrhosis in long term and spread of infection.

Keywords: Periodontitis, Oral lesions, Hepatitis B, Hepatitis C, Gingivitis.

INTRODUCTION

Hepatitis is one of the pre-eminent causes of death globally, with Pakistan and Egypt bearing a disproportionate disease burden [1]. Around 1.34 million people all around the world die from this disease with 12 million people affected in Pakistan. Every year 150000 new cases are diagnosed here. Prevalence in Sindh is 8% [1]. Aside from the high mortality rate, it is also one of the causes of serious morbidities such as liver cirrhosis and hepatocellular carcinoma, emanating in accentuated strain on the healthcare system[2]. The overall increase in the spread of communicable diseases has caused concern in the health care provider community and SOP's are designed to decrease the spread[3, 4]. In Pakistan hepatitis, C is more common than B and since the global availability of hepatitis B vaccine to local masses, the prevalence has declined[5-8].

It has been noticed that approximately 75% of the HCV cases may present with Extrahepatic manifestations (EHM), the majority being oral manifestations[9]. A high rate of detection of Hepatitis B and C was noticed in patients with periodontal diseases [10, 11]. While several studies have shown a positive correlation of Lichen Planus with Hepatitis C[12, 13]. Some authors have also linked viral hepatitis with Sjogren Syndrome, Gingivitis, Periodontitis, Oral squamous cell carcinoma, Paraneoplastic Pemphigus, Stomatitis, Cheilitis, Xerostomia, Pemphigus Vulgaris and Behcet's disease, not backed by much evidence [4, 9]. Some of these are malignant or premalignant conditions increasing the morbidity and mortality rate as viral hepatitis causes deferral in treatment due to messing with the clotting pathway.

Both Hepatitis B and C viruses are transferred through the blood, body secretion, and saliva of the patient. Though its presence in the saliva is a source of cross-infection but only when it achieves a high viral load. Dentists and other staff working in dental clinics are prone to contracting this disease due to exposure to blood and saliva, both based on the procedures and instruments of dental treatment. It is very important to take a detailed history of suspected patients as any haste may result in uncontrollable bleeding as well as exposure of the whole dental team and environment[2].

Dentists may be the first person to point out such health issues which are clinical signs and symptoms of underlying systemic disorders. Viral Hepatitis especially hepatitis C virus can be frequently associated with potentially malignant and malignant oral diseases and could be a triggering factor of some of those disorders or at least influence their outcome[9].

This study is designed to find out the frequency of oral lesions in patients diagnosed with hepatitis B and C as there is no data available in our population related to the most common oral lesion encountered in these patients. This will benefit the general dentist treating most of the population beforehand knowledge of problems they may come across in patients suffering from hepatitis and refer them for evaluation and treatment by a specialist.

MATERIALS AND METHODS

A retrospective cross-sectional study was conducted on the data of patients who visited Sindh Institute of Oral Health Sciences from 2016 March to 2021 January. Data of patients who reported with positive PCR reports and under treatment for hepatitis were included. While data of patients under treatment for or diagnosed with Diabetes Mellitus, Rheumatoid Arthritis and Hypertension or already treated for hepatitis was excluded from the sample. Convenience sampling was done and data of patients who fulfilled the criteria were included in the study. The study took 3 months from data collection to writing of the article. A performa was designed to collect the data specifically for the study. Performa was designed after reviewing the literature for oral lesions associated or linked with hepatitis B and C. It was then reviewed by Oral Pathologists and Oral and Maxillofacial Surgeon for face validity and relevance. After taking permission from the institutional head and institutional review board of JSMU (Ref No: JSMU/IRB/2021/-475) data was collected by studying the patient forms.3 investigators reviewed the forms and data available in departmental record of special cases. Incomplete forms/data were removed as a part of the protocol. Total 80591 forms were reviewed and data of 236 forms was removed due to incomplete information. Data analysis with SPSS ver.18 was done to find out the correlation between hepatitis and oral lesion and if there is a

significant relation between treated cases of hepatitis and presence of lesion.

RESULTS

A total of sixty-seven patients reported with hepatitis in the past 5 years to Oral medicine OPD with lesions. Most of the patients were female with male to female ratio of 1: 1.5 and with mean age of 40 yrs with the youngest patient of 18 years. Table 1 shows the demographics of the patients whose data was included in the study. Figure 1 shows the number of participants from both genders according to the type of infecting hepatitis. The highest cases from both males and females were of Hepatitis C. While only 1 female was infected with both Hepatitis B and C virus [Figure 1].

Table 1: Demographics of the patients included in the study.

Variable	Distribution of Patients	
Gender	Male= (n=38, 41.8%)	Female= (n=29, 43.3%)
Age	<40 years= (n=27, 40.2%)	> 41 years= (n=40, 59.7%)
Address	Karachi= (n=30, 44.8%)	Others= (n=37, 55.2%)
Hepatitis	HBV= (n=25, 37.3%)	HCV= (n=41, 61.2%)
Treatment	Treated= (n=12, 17.9%)	Not Treated= (n=55, 82.1%)

Paired t-test was used to find out the correlation between different pairs of variables [Table 2]. The only significant relation was found between hepatitis C and lesions. While there was no significant relationship between hepatitis B and age with lesions nor there was a link between treatment of the Hepatitis B and C with the lesion.

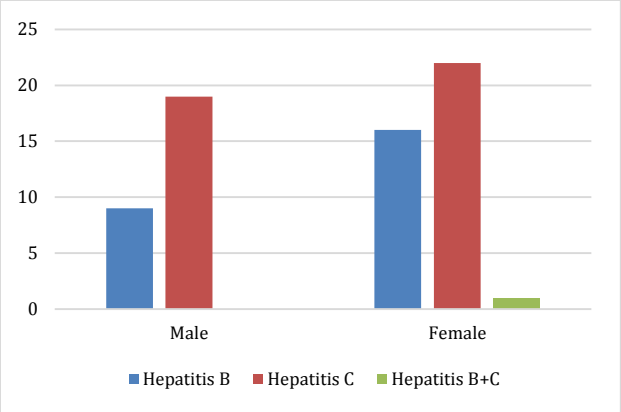

Figure 1: Distribution of participants according to gender and type of hepatitis.

Table 2: Paired t-Test to find out the relationship between different pairs.

Pairs		p-Value (2-tailed)	Significance
Pair 1	Hep_B - Lesion	.192	N. Sign.
Pair 2	Lesion - Hep_C	.052*	Sign.
Pair 3	Treated - Lesion	.448	N. Sign.

*p-Value significant at level of 0.05.

Table 3: Lesion according to type of Hepatitis.

		Lesion						
		None	Gingivitis	Periodontitis	Lichen Planus	SSC	Other	Total
Hepatitis	Hep B	3	12	6	1	1	2e.,32	25
	Hep C	12	9	13	4	0	3	41
	Both	0	0	1	0	0	0	1
Total		15	21	20	5	1	5	67

Table 3 shows the frequency of lesions found in patients diagnosed with Hepatitis B, hepatitis C or with both. The commonest lesion was Gingivitis in Hepatitis B patients(N=25) followed by Periodontitis, Others, Oral lichen planus and only one case of Oral squamous cell carcinoma. While in Hepatitis C(N=41), commonest lesion was periodontitis followed by gingivitis, oral lichen planus and others. While patients suffering from both Hepatitis B and C had reported with only with a single case of Periodontitis. Figure 2 shows the frequency of lesions according to gender. Both genders show similar distribution of lesions. The commonest lesion in each gender was Gingivitis followed by Periodontitis and no lesions.

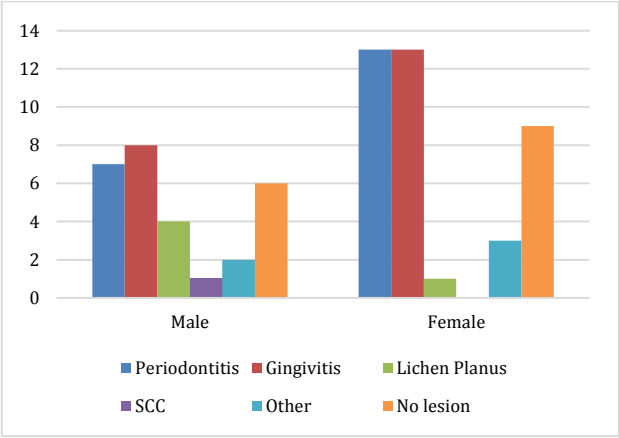

Figure 2: Frequency of lesions according to gender.

DISCUSSION

On daily basis more than fifty patients visit Oral Diagnosis/Oral Medicine department at Sindh Institute of Oral Health Sciences since March 2016. During this period, we only had sixty-seven known cases of hepatitis B and C. Patients visiting government hospitals are of a lower socioeconomic status and they are unaware of their medical conditions. Regular medical visits are non-affordable in private setup and in government hospitals are cumbersome tasks, hence, the delay in diagnosis and treatment. There are few oral lesions/conditions that give signs that there are underlying medical condition and may help the dentist be the first one to diagnose and refer the patient to a general practitioner or specialist for further evaluation and treatment.

After applying paired t – test to find out the relationship between hepatitis B and C with the oral condition, we found that patients with hepatitis C was more prone to have oral lesion such as periodontitis, gingivitis, and oral lichen planus in comparison to patients suffering from Hepatitis B. While the relationship between hepatitis and oral lesion had no significance. Previously, Hepatitis C and B were linked to Oral lichen planus and few other oral problems including periodontitis and gingivitis by several authors. Both diseases are chronic and are on rise in Pakistan with prevalence reported as high as over 8 million people infected with hepatitis[14]. OLP has been associated with hepatitis C since 1991[15]. This led to case control studies to explore the link between the two and found higher prevalence of OLP in HCV patients. Further studies found out pathogenesis of OLP in HCV and they at the site found HCV specific T-cells with absence of viral genome[12, 13]. These support the present finding of OLP in Hepatitis C patients. Though studies held in China have contrary findings and have found OLP in both controls and cases in Hepatitis C patients with

similar prevalence of 1%. While another study found Hepatitis B more prevalent in OLP patients16. Another reason might be that the histopathological results of the white striae lesions of the oral mucosa associated with HCV infection were more likely related to be lichenoid reaction[12, 17]. Which lead to no further tests for HCV in patients with OLP[16].

Both gingivitis and periodontitis has been associated with Hepatitis B and C. Sjogren's was diagnosed in 7.7% of the cases while chronic generalized periodontitis of moderate severity (46.2-50%), less often generalized periodontitis of mild (26.8-27.8%) or severe (13.5-16.5%) degree and chronic generalized catarrhal gingivitis (13.5-5.5%) were often diagnosed in HCV. Also, xerostomia due to Sjogren causes cheilitis, glossitis and stomatitis[17]. Comparing it to our results we found that there is a significant relationship between Hepatitis C with oral lesions in comparison to Hepatitis B. Also, the relationship between lesion and Hepatitis is the highest for Gingivitis (N=21) and only 5 cases of OLP reported. They are in concordance with the earlier finding that there is a weak link between Hepatitis and OLP though there is a significant relationship between oral lesions and Hepatitis C.

In a recent study conducted in Egypt, HCV patients had greater oral mucosal signs and symptoms than healthy controls. Xerostomia (40%) changed taste (24%) and oral lichen planus (20%) were statistically significantly more common in HCV patients, but atrophic tongue (18%), oral pigmentation (14%) and pallor (10%) were not statistically significant. Oral pigmentations (P = 0.013, OR=12.6), atrophic tongue (P = 0.039, OR=7.8), and xerostomia (P = 0.028, OR=4.3) all had considerably higher chances when HCV was present. Other variables, however, showed no discernible influence on any of the oral findings[18]. These results are in contrast with ours as we had no cases of xerostomia.

One of the causes of prevalence of Periodontitis in our sample was that most of the patients visiting government-based hospitals belonged to the lower social status and usually do not have access to low-cost dental services. Dental plaque and calculus are the major cause of gingivitis and periodontitis in our population. Though, periodontal disease is common in hepatitis patients[10, 11]. Very few cases of Oral lichen planus show that it does not have a strong link with hepatitis but there is chance of certain changes such as formation of immune cells due to chronic hepatitis which may trigger OLP in these patients[19].

The risk of transmission of HBV is as high as 30% in the dental office. When exposed to hepatitis C virus-positive blood, the risk of transmission is 1.8%[20]. This shows dentist needs to be very careful while dealing with hepatitis positive patients for they can contract the disease themselves and can also spread it to other people coming in contact or dealing with the dirty instrument or biological waste. This also requires the proper disposal of biological waste ensuring needle and other items are never reused and instruments are washed and sterilized following CDC guidelines and dental unit and office are properly disinfected.

Thus, the presence of these lesions may instigate the clinicians to explore further presence of any chronic / communicable disease. This would lead to early diagnosis and management of these diseases leading to decrease load on the government hospitals as cases of hepatitis are on the rise in Pakistan. Concrete measures are needed to prevent the spread of this disease by creating awareness in public.

CONCLUSION

Hepatitis B and C is on rise in Pakistan. Hepatitis is linked to several oral lesions and presence of these lesions should warrant respective testing to find the presence of this communicable disease. Most of the cases are undiagnosed having minor symptoms. We found the commonest lesion in our population was periodontitis followed by gingivitis and oral lichen planus. There is a positive link between oral lesions and hepatitis C.

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