

Oral Manifestations of Hospitalized Cirrhotics at Shaikh Zayed Hospital, Lahore: A Pilot Study

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ABSTRACT

Background: In Pakistan cirrhosis has reached alarming proportions due to spread of HCV and HBV viruses. Some of the oral manifestations of cirrhosis have been found to exhibit geographically variability. There is no research available on the oral health of these patients in Pakistan and their specific oral problems are not known. **Objectives:** This study examined a cohort of cirrhotic patients admitted at Shaikh Zayed hospital Lahore to assess their oral health status and needs. **Materials and methods:** Thirty consecutive patients admitted with diagnosis of cirrhosis were examined for oral health status. Extra oral examination included any visible lesions or abnormalities on the face, head or neck region, lymph node enlargement and TMJ dysfunction. Intra oral examination included measurement of caries (DMFT) and periodontal disease level (CPITN), oral mucosal lesions, prosthetic status and prosthetic needs of the patients. All findings were recorded on the standard WHO oral health survey form. **Results:** The oral health of this cohort was poor compared to the general population. Xerostomia (20%), papillary atrophy (100%), oral Melanosis (90%), petechial hemaorrhages (26%) and glossitis (53%) were found prevalent in the sample. Two females had oral lichen planus and one of the patients had oral ulceration. DMFT score (Mean=5.7) was not different from national average (Mean=8.02). Periodontal disease was more severe than general population. Less than 21% of the sample wore prostheses and over 50% needed one. TMJ dysfunction was common but fewer patient complained of the condition than the number of patients with clinical signs. **Conclusions:** Oral health of cirrhotic population is worse than general population and they have significant oral health needs. Further research is required to investigate this relationship. Effective oral health education of patients' and physicians' is required to reduce the burden of oral disease thus improving quality of life for these patients.

Hepatic cirrhosis is an end stage liver disease the etiology of which includes alcohol abuse, hepatitis, certain chemicals and biliary obstruction. Genetic and auto immune disturbances have also been identified as causative agents.¹

In western countries the most common cause remains alcohol abuse^{4,5} however in recent years viral hepatitis has been identified as an important cause of chronic liver disease world wide^{5,6,7}

No specific data is available on the global prevalence of the condition however it has been declared one of the leading causes of death in US.² and 15th leading cause of death world wide³

Specific studies on cirrhosis are sporadic in Pakistan. The few studies on the subject indicate

that hepatitis C accounts for the most number of patients having cirrhosis followed by hepatitis B and HCV and HBV together in the country.^{12,13,14}

There are many extra hepatic manifestations of cirrhosis which include, skin pigmentations, spider nevi, redness of palms, arthritis,¹⁷ salivary gland enlargements¹⁸, Sjogrens syndrome^{9,19}, osteoporosis^{20,21}, oral lichen planus^{22,23}, gastric red spots and rectal mucosal reddening.²⁴

Although two of the most common extra hepatic findings of chronic liver disease lichen planus and sialadenitis involve predominantly the oral region⁶ not many detailed studies to assess the oral health of these patients have been carried out in the past.

The few available studies indicate that patients with chronic liver diseases have significant oral health needs.^{6,25} There is evidence to suggest that severity of periodontal disease is greater in these people,^{26,27} salivary flow rate is lower and decayed teeth are more in number than in normal individuals.²⁵

Since some of the oral findings of chronic liver disease have shown a geographical or cultural variability²⁸, it is pertinent to conduct a study that examines the oral health problems associated with cirrhosis in Pakistan.

The aim of this study was to assess oral health status of hospitalized cirrhotic patients in Shaikh Zayed Hospital Lahore, Pakistan, so as to identify the oral health needs of this population and to compare this data with findings of the National data.

MATERIALS AND METHODS

Study population

Thirty consecutive patients admitted in Shaikh Zayed hospital diagnosed with hepatic cirrhosis on the basis of clinical findings, liver biochemistry and ultra sonography were examined. Patients with grade III or IV encephalopathy or those who refused participation were not examined.

Method of examination

All admitted, diagnosed cases of viral hepatic cirrhosis fulfilling the inclusion criteria were requested for permission to examine their oral cavities.

Examinations were carried out in the wards on the patients' beds in a hand-held torch's light. Extra oral examination included any visible lesions or abnormalities on the face, head or neck region, lymph node enlargement and temporomandibular joint dysfunction.

Intra oral examinations were carried out with the help of dental mirror and CPITN probe. A wet cotton pellet held in tweezers was used to clean debris where required. The examination included measurement of caries (DMFT) and periodontal disease level (CPITN), oral mucosal lesions, prosthetic status and prosthetic needs of the patients. One examiner conducted the extra and intra oral

examinations while another recorded the findings.

All clinical findings were recorded on the standard WHO oral health survey form.

RESULTS

The sample consisted of 30 patients with ages ranging from 23 to 76 yrs. Mean age was 51 ± 12.5 years. Twenty two (73%) were males and 8 (26%) were females.

Mean DMFT was 5.7 ± 5.5 . Only 13% had a DMFT score of zero. Seventy seven percent had one or more decayed teeth in their mouth. Fifty percent had one or more missing teeth and 17% had one or more filled or crowned teeth in their mouth.

Periodontal condition as recorded by CPITN was poor. Only one patient had healthy periodontium. Four (13%) had bleeding gums, 10 (33%) had calculus and another 10 patients had shallow pocketing (4-5 mm). Five patients (16.7%) had pockets deeper than 6 mm.

Eight of the patients (26.7%) presented with symptoms of TMJ dysfunction where as 16 of them (53.3%) had signs of TMJ dysfunction.

Twenty percent wore one or more prostheses in the upper while thirty percent wore them in lower arch. Bridges were the most common type of prosthesis in the lower arch (13%) where as partial dentures were most common type (10%) observed in the upper arch.

Twenty four percent of the study population were in need of prosthesis in the upper arch and almost 47% needed one in the lower arch.

Oral mucosal abnormalities listed in the WHO survey form were not common in the sample. Only two patients presented with lichen planus. Another two had candidiasis and further two patients had a periodontal abscess. Ulceration of oral cavity was found in only one patient.

Some other abnormalities were noted to be commonly present. These were xerostomia (20%), petechial hemorrhages (26.7%), glossitis (53.3%), pigmentation (melanosis) of the oral cavity (90%) and papillary atrophy of the tongue which was found in all thirty patients.

DISCUSSION

The DMFT in this sample had a Mean value

of 5.5. This was lower than the adult national data which had a mean value of 8.02. One possible reason for the difference could be the small sample size and another could be specific socioeconomic status of the inpatient population at Shaikh Zayed hospital which is mostly urban middle class and is different from that of the national pathfinder survey's sample. There is evidence to suggest that higher socioeconomic status is associated with lower caries scores.²⁹

The results of this study are different from that of Henderson et al²⁵ who found 75% of chronic hepatitis C and cirrhotic patients in Scotland had decayed teeth compared to 50% in healthy people of same age group. Also in contrast are results from Coates et al³⁰ who reported a similar higher prevalence in England. The lower caries level seen in the present study may be a reflection of the generally lower caries prevalence in Pakistan³¹ compared to UK and Scotland.

CPITN score reflect a higher percentage of cirrhotic population needing periodontal care and comparatively severer periodontal disease than the healthy adults from national pathfinder survey where 17% individuals has healthy periodontium. Calculus was present in 33% similar to the national data but pocketing was found more common in the cirrhotic cohort which is in agreement with the findings from other studies^{32,33}

The findings regarding oral mucosal lesions suggest a higher incidence of mucosal abnormalities in this cohort which many studies have found to be occurring infrequently among healthy populations.^{34,35}

The low prevalence of oral lichen planus (OLP) in the present sample may be due to the specific genotype(3a) found in Pakistan which may not produce an immunogenic response similar to those found in some countries of southern Europe and Japan where the association between the two conditions is strong. It has been suggested that variation in prevalence of lichen planus is due to the genetic variation (HLA DR6)²⁸ in the virus types that are found in different parts of the world. It may also be due to the small non random sample in the present study that no significant association could be seen as only two females had lichen planus. A larger study with random sampling may produce

different results.

TMJ signs and symptoms were also more prevalent among this group compared to healthy populations. This could be a reflection of gastric problems common in these patients or due to the chronic stress of the illness.

Prosthetic need was found to be higher in this group than the healthy population which may be a consequence of higher bone loss and resultant tooth loss.

The prevalence of TMJ dysfunction was found many times higher (26.7% had symptoms and 53.3% had signs) than the national statistic for adults which indicated that over 90% had no signs or symptoms of the condition.

CONCLUSIONS AND RECOMMENDATIONS

Cirrhosis and its complications are a significant burden on the resources³⁶ in the developed world where the direct medical costs for inpatient care of cirrhotics is estimated over 1.4 billion dollars³⁷ and these costs are exclusive of chronic hepatitis C related inpatient care. The cost of oral health is an additional burden on health care system. The burden increases many times if oral problems are not treated earlier in their course.³⁸

Fortunately oral diseases are largely preventable³⁹ therefore it is logical to find out what kind of oral problems are related to chronic liver disease and seek to identify them early in the course of disease. Once it is known what problems can co exist with cirrhosis of liver it would be easier to design preventive strategies for them and probably even develop protocols for their treatment.

This study indicates that there is a heavy burden of oral disease in cirrhotic population and this burden is much greater than that of oral disease in general population. Since many of the oral conditions cause discomfort and pain they are an addition to the morbidity associated with cirrhosis. This additional morbidity may be reduced at least partially with provision of dental care, timely referral and co-ordination between the medical and dental teams with in a hospital.

A team approach to handling the cirrhosis population may be most helpful in improving quality of life for these patients. The findings of this

study can be used by both dentist and treating physicians. The dentist may now know what to expect in the oral cavity of a patient with cirrhosis and may be better able to not only treat the condition knowing its association with the systemic disease but may even be able to diagnose and refer hitherto un known cases of chronic liver disease to an appropriate medical facility based on the oral signs.

For a treating physician, the knowledge of the morbidity associated with cirrhosis may enable them to put emphasis on oral health care and provide appropriate referral. It would also help them in diagnosing various oral conditions in case a dentist isn't available and manage them in the light of their knowledge of the systemic condition and the pathways that generate the oral complication.

Considering the findings and limitations of the present study it is recommended that:

- 1) A larger preferably multi centric study on the same lines is carried out with random sampling with representation from different socioeconomic and age groups with matched control group examined for comparisons.
- 2) On the basis of present findings a protocol should be developed for a compulsory dental health assessment of cirrhotic patients which is monitored over time with appropriate referral for provision of oral health care.

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