Oral Health status of the Patients with Tuberculosis at the Govt TB & Chest diseases Hospital, Andhra Pradesh, India

M.D. Shakeel Anjum, P. Partha Sarthi Reddy, Monica M, Praveen B.H

Abstract

This study was conceived to assess the oral health status of the patients with tuberculosis at the TB hospital in the state of Andhra Pradesh, India. Methods: The study population consisted of 87 patients aged 14-60 yrs admitted in the seven wards of the hospital. The soft tissue lesions, periodontal status and the dental caries experience were measured using the WHO criteria, CPITN and DMFT index respectively. Results: None of the patients exhibited a healthy periodontal status. A majority of them had calculus (57.47%), followed by shallow and deep pockets respectively (32.18%, 8.02%). The prevalence of dental caries was 79.3% in the study population the mean DMFT of the males and females were 2.04 & 1.47 respectively. 47.1% of the subjects had no soft tissue lesions, followed by the premalignant lesions which were quite low in the subjects examined. Conclusion: The oral health of these subjects has been neglected and much needs to be done to improve the oral health of these classes of patients.

Key Words: Tuberculosis; Oral Health; CPITN

Introduction

Tuberculosis (TB) has a long history. It was present before the beginning of recorded history and has left its mark on human creativity, music, art and literature; and has influenced the advance of biomedical sciences and healthcare. Its causative agent, Mycobacterium tuberculosis, may have killed more persons than any other microbial pathogen (Daniel 2006).

Every day in India more than 20,000 people become infected with the tubercle bacillus, more than 5000 develop the disease, and more than 1000 die from TB. In India, tuberculosis kills 14 times more people than all tropical diseases combined, 21 times more than malaria, and 400 times more than leprosy. Every year, another 20 lac people develop tuberculosis in India, nearly one million of them highly infectious sputum positive cases — two such cases developing every minute. India annually spends a whopping Rs13, 000 cores each year to treat tuberculosis.(1)

There are a few studies and case reports published on the oral manifestations of tuberculosis in India and overseas, but these have mainly focused on the rare lesions caused by “mycobacterium tuberculosis” in the oral cavity. Conversely, scant literature has been published on the oral health status of these patients admitted at the various government and private centers around the country.

Therefore a study was conceived which was to look into the various aspects of oral health among the patients who were admitted at the Government TB & Chest Diseases Hospital at Anantagiri, RR district, Andhra Pradesh, India. The aim of the present study is to measure the Oral Health Status of the patients with Tuberculosis admitted at the Government TB & Chest Diseases Hospital at Anantagiri, Ranga Reddy District, Andhra Pradesh, India.

Materials & Methods

This study design employed here is a cross sectional observational study which was carried out at the Govt TB and chest diseases hospital, Anantagiri, India. The total number of patients admitted at the start of the study (9th of May 2009) was 195, out of which 87 patients are affected with tuberculosis. Patients with tuberculosis were only included in this study. Other chest diseases are promptly excluded. Prior permission was taken from the dean of the hospital and the study was also approved by the institutional review board of the respective dental school.

A specially designed closed ended questionnaire was designed to gather pertinent details regarding their oral health. Informed consent was taken from all the subjects before the start of the study. Personal interviews were conducted and the questionnaire form was filled up by the examiner himself, followed by the clinical examination.

The calibration was done in the Clinical wards of the Departments of Community Dentistry and Oral Medicine, Sri Sai College of
Dental Surgery, Andhra Pradesh, India. The CPITN and DMFT index was recorded for 10 patients who were chosen for the calibration, their identity was hidden from the examiner. The same set of patients was recalled at a later date, the scores once again assigned and the intra examiner variability assessed. (Kappa score=0.8) Assistance was taken from the Post graduate students of Oral medicine and Radiology in diagnosing the various soft tissue lesions mentioned in the questionnaire form.

The examinations were conducted in the respective wards of the subjects using torch light as the source of light. The various soft issues were screened to identify lesions and the WHO criteria were strictly adhered to, when classifying various soft tissue lesions. The periodontal status and treatment needs of the subjects were individually assessed by using the color coded ball ended CPITN probes. All the 6 sextants were examined and the scores assigned according to the standard criteria of the CPITN index.

The Dental caries experience was measured using the standard DMFT index and the criteria for recording a tooth as decayed/filled/missed was strictly adhered to. The collected data was entered into the standard Microsoft Excel 2007 and analyzed using the SPSS Software version 11.5. Chi – square test and Pearson correlation coefficient were used for statistical analysis.

Results

The population under study consists of 80.45% and 19.54% (males- 70, females-17). The prevalence of dental caries among the subjects was 79.3%. The mean DMFT of the males and females in the study group was 2.07 and 1.47.

<table>
<thead>
<tr>
<th>Score</th>
<th>DMFT</th>
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<tbody>
<tr>
<td>0</td>
<td>-</td>
</tr>
<tr>
<td>1</td>
<td>0.5</td>
</tr>
<tr>
<td>2</td>
<td>1.96</td>
</tr>
<tr>
<td>3</td>
<td>1.59</td>
</tr>
<tr>
<td>4</td>
<td>3.28</td>
</tr>
</tbody>
</table>

Table 3 Co relation between Periodontal status & DMFT

As far as the number of subjects visiting a dentist in the past, only 14.9% had ever been to a dentist and the remaining subjects (85.1%) had never been to a dentist. Regarding the complaints related to their oral cavity, 58.6% of the patients have no complaints, 24.1% had painful teeth, 6.89% complained of bleeding gums followed by others.

The subjects medical history was also looked into, apart from tuberculosis and surprisingly 95.4% of the subjects had apparently no systemic diseases, only 3.4% of the subjects were HIV positive and 1.14% had other systemic diseases.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Sc0</th>
<th>Sc1</th>
<th>Sc2</th>
<th>Sc3</th>
<th>Sc4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>-</td>
<td>5.8%</td>
<td>76.4%</td>
<td>17.64%</td>
<td>-</td>
</tr>
<tr>
<td>Male</td>
<td>-</td>
<td>1.42%</td>
<td>52.8%</td>
<td>35.7%</td>
<td>10%</td>
</tr>
</tbody>
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Table 2 Gender wise distribution of the study subjects based on the CPITN scores.

Discussion

This study was formulated to assess the oral health status of the subjects with tuberculosis who are admitted at the Govt TB Hospital in Anantagiri, RR District, Andhra Pradesh. In our study population, the percentage of the subjects with a healthy periodontal status was nil which is far away from the goal of WHO for the year 2000 and 2010.(2,3). The reason for
this might be due to socio economic factors. It is well known that the lower socio economic strata have generally less access to dental care than the upper or the middle strata. (2, 3) Males have a significantly higher DMFT scores than the females (P<0.05)

There was no significant difference between males and females as far as the periodontal status is concerned (not significant). This is in sharp contrast to earlier studies worldwide which showed that females had a better periodontal status than males. (4, 5) The reason why gender affects periodontal status may be attributed to the habit and conscious of females in performing a better oral hygiene practice. Similar results could not be seen in this study as the study subjects generally belonged to the lower socio economic class in India and oral hygiene may have taken a back seat because of the presence of this chronic debilitating illness.

A positive co relation was found between the CPITN and the DMFT scores in these subjects, which is in tune keeping with those found by other studies. (2, 3) The reason for this co relation may be due to the fact that the same etiological factors are responsible for periodontal diseases and caries; both diseases are started by microbial plaque. However such co relation however could not be established by many other researchers. (6)

There was no relationship between the duration of illness and the periodontal status of these patients (statistically insignificant) This study clearly reflects the earlier proven fact that the lower economic strata generally have less access to dental care. (6) Only 14.9% of the subjects had ever visited a dentist regarding their oral health problems. The results obtained here match very similarly to other studies done in the past. As it was expected, 58.6% of the patients apparently did not have any complaints with respect to their oral health and this can very much be justified. These subjects have been suffering from a chronic debilitating illness such as tuberculosis and it is quite imperative that oral health would have taken a back seat when compared to the general health of the patient.

Only 3.4% of the patients admitted here have been HIV positive and a large chunk of the subjects had apparently no systemic disease apart from tuberculosis. The reason may be that there is no proper methodology in place to screen the subjects for other diseases. The subjects are screened for other illnesses only if they have any signs or symptoms which hinted at a particular disease. As there are only a few subjects who are HIV positive, it is not possible to compare them with subjects who are apparently healthy (statistically insignificant). The subjects were screened for the presence of various soft tissue lesions and surprisingly 32% of the subjects had melanin pigmentation. There are hardly any studies which have established a co relation between tuberculosis and melanin pigmentation and much research needs to be carried out to establish this association.

During the course of the study, it was essentially found out that there wasn’t a single dentist appointed in the hospital who could look into the basic needs of the people regarding their oral health. Apart from this startling fact, none of the general physicians and the paramedical staff was concerned about the oral health problems of these patients, in spite of them being highly educated.

This is an area of concern considering that thousands of patients admitted at the various government centers, have virtually no access to dental care. It can be implied that these patients would be unable to relish the high protein diet which has to be consumed to counter cachexia and hunger.

With the advent of powerful anti tubercular drugs, it is quite understood that it would definitively lead to an improvement of the general health of the patient within a matter of few weeks. Thus it will be off a great help if the oral health is taken care of simultaneously for these patients. There is an urgent need to set up a central monitoring agency mainly run by the dental professionals and the medical staff, which proposes to have its numerous dental wings at the various hospitals which exclusively render care for TB patients.

It is up to the dental professionals to take up this matter at the highest level and fight for these patients; after all we are the guardians of the oral health in our country. The next step could also be to educate the physicians and the Para medical staff of the basic odontogenic infections and the ways to prevent them.

Conclusion

In this study, we found that none of the patients had a healthy periodontal status and a majority of them require periodontal therapy to revert back the tissues to a normal state. The severity of the dental caries experience was also surprisingly low in comparison with the general population and much research needs to be done to co relate the association between tuberculosis and melanin pigmentation of the oral mucosa.
Tuberculosis is a true menace in India and it could well be wiped out provided that there is a consolidated effort on part of the Medical fraternity and the Health ministry. A new approach has to be implemented which would cater to the oral health needs of these class of people. As India is battling hard to counter the menace of tuberculosis, it could well be an uphill task for the oral health care providers to satisfy their oral health needs.

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