

A study of oral candidiasis and factors associated with it at tertiary health centre

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Abstract

Background: Oral candidiasis is an opportunistic infection of the oral cavity. It is common and underdiagnosed among the elderly, particularly in those who wear dentures and in many cases is avoidable with a good mouth care regimen. **Aims and Objectives:** To Study Oral candidiasis and Factors associated with it at tertiary health centre. **Methodology:** This was a cross sectional study carried out in the department of Medicine during the one year i.e. January 2017 to January 2018, during the one-year period of the patients who showed the clinical features of oral candidiasis were investigated thoroughly like culture, CBC, USG and other microbiological investigation necessary as per the patients. All the diagnosed patients were included into the study so during the one-year period there were 63 patients included into the study. All necessary details of the patients like age, sex, associated factors were noted, entered in the excel sheets and analyses by Excel software for windows 10. **Result:** The majority of the patients were in the age group of 60-70 were 26.98%, followed by 50-60 were 20.63%, 40-50 were 19.05%, 70-80 were 14.29%, >80 were 11.11%, 30-40 were 7.94%. The majority of the patients were male i.e. 55.56% followed by female were 44.44%. The majority of the patients were associated with the factors like On Steroid therapy i.e. 55.56%, followed by Old age (>60) in 52.38%, Use of denture in 39.68%, H/o long term antibiotics in 30.16%, H/o Diabetes Mellitus in 23.81%, H/o immune-compromised disease in 17.46%, H/o long term admitted to ICU in 14.29%, H/o Smoking in 11.11%, K/c/o \Cancer in 4.76%. **Conclusion:** From our study it can be concluded that the majority of the patients were old aged and associated factor were like patient of Steroid therapy followed by Old age, Use of denture, H/o long term antibiotics, H/o Diabetes, bed ridden patient, H/o immune-compromised disease Smoking, Cancer

Key Word: Oral candidiasis, Steroid therapy, Risk factors of Candediasis

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INTRODUCTION

Oral candidiasis is an opportunistic infection of the oral cavity. It is common and underdiagnosed among the elderly, particularly in those who wear dentures and in many cases is avoidable with a good mouth care regimen. It can also be a mark of systemic disease, such as diabetes mellitus and is a common problem among the immunocompromised. Oral candidiasis is caused by an

overgrowth or infection of the oral cavity by a yeast-like fungus, candida.^{1,2} The important ones are *C albicans*, *C tropicalis*, *C glabrata*, *C pseudotropicalis*, *C guillierimondii*, *C krusei*, *C lusitaniae*, *C parapsilosis*, and *C stellatoidea*. *C albicans*, *C glabrata*, and *C tropicalis* represent more than 80% of isolates from clinical infection.³ Oral candidiasis is the most common human fungal infection^{4,5} especially in early and later life. In the general population, carriage rates have been reported to range from 20% to 75%⁴ without any symptoms. The incidence of *C albicans* isolated from the oral cavity has been reported to be 45% in neonates,⁶ 45%–65% of healthy children,⁷ 30%–45% of healthy adults,^{8,9} 50%–65% of people who wear removable dentures,⁹ 65%–88% in those residing in acute and long term care facilities,^{9–12} 90% of patients with acute leukaemia undergoing chemotherapy,¹³ and 95% of patients with HIV.¹⁴ *C albicans* is a normal commensal of the mouth and generally causes no problems in healthy people. Overgrowth of candida, however, can lead to local discomfort, an altered taste sensation,

dysphagia from oesophageal overgrowth resulting in poor nutrition, slow recovery, and prolonged hospital stay. In immunocompromised patients, infection can spread through the bloodstream or upper gastrointestinal tract leading to severe infection with significant morbidity and mortality. Systemic candidiasis carries a mortality rate of 71% to 79%.¹⁵ So, we have studied the patients of Oral candidiasis for associated risk factors.

METHODOLOGY

This was a cross sectional study carried out in the department of Medicine during the one year i.e. January 2017 to January 2018, during the one year period of the patients who showed the clinical features of oral candidiasis were investigated thoroughly like culture, CBC, USG and other microbiological investigation necessary as per the patients. All the diagnosed patients were included into the study so during the one year period there were 63 patients included into the study. All necessary details of the patients like age, sex, associated factors were noted, entered in the excel sheets and analyses by Excel software for windows 10

RESULT

Table 1: Distribution of the patients as per the age

Age	No.	Percentage (%)
30-40	5	7.94
40-50	12	19.05
50-60	13	20.63
60-70	17	26.98
70-80	9	14.29
>80	7	11.11
Total	63	100.00

The majority of the patients were in the age group of 60-70 were 26.98%, followed by 50-60 were 20.63%, 40-50 were 19.05%, 70-80 were 14.29%, >80 were 11.11%, 30-40 were 7.94%.

Table 2: Distribution of the patients as per the sex

Sex	No.	Percentage (%)
Male	35	55.56
Female	28	44.44
Total	63	100.00

The majority of the patients were male i.e. 55.56% followed by female were 44.44%

Table 3: Distribution of the patients as per the associated factors

Associated factors	No.	Percentage (%)
On Steroid therapy	35	55.56
Old age (>60)	33	52.38
Use of denture	25	39.68
H/o long term antibiotics	19	30.16
H/o Diabetes Mellitus	15	23.81
H/o immune-compromised disease	11	17.46
H/o long term admitted to ICU	9	14.29
H/o Smoking	7	11.11
K/c/o Cancer	3	4.76

The majority of the patients were associated with the factors like On Steroid therapy i.e. 55.56%, followed by Old age (>60) in 52.38%, Use of denture in 39.68%, H/o long term antibiotics in 30.16%, H/o Diabetes Mellitus in 23.81%, H/o immune-compromised disease in 17.46%, H/o long term admitted to ICU in 14.29%, H/o Smoking in 11.11%, K/c/o Cancer in 4.76%.

DISCUSSION

The incidence and prevalence of candidemia is on a rise in many countries worldwide. *Candida* species are the fourth leading cause of nosocomial blood stream infection (BSI) in the United States.¹⁶ In India, the picture is not very clear due to lack of multicentric studies although there are a few studies indicating the increasing trend of candidemia in some tertiary care hospitals.¹⁷ The mortality rate associated with candidemia worldwide is also high ranging from 10% to 49%.¹ More than 17 different species of *Candida* have been reported to be etiologic agents of invasive candidiasis in humans. Although more than 90% of invasive diseases by *Candida* are caused by 5 species - *Candida albicans*, *Candida glabrata*, *Candida tropicalis*, *Candida parapsilosis* and *Candida krusei*- the number of reported species continues to grow.¹⁶ Although *C. albicans* still remains the most common cause of candidemia worldwide, there has been an increase in the isolation of non-*albicans* *Candida* species.¹⁶ In the few available studies from India, *C. tropicalis* has been the most common species of *Candida* isolated from blood.^{17,18} Many studies have established independent risk factors for candidemia on the basis of multivariate analyses.¹⁶ The important independent risk factors include use of broad-spectrum antimicrobials, cancer chemotherapy, mucosal colonization by *Candida* species, indwelling vascular catheters like central venous catheters (CVCs) and others.¹⁶ Other predisposing factors include immunocompromised states such as diabetes mellitus and malignancy.¹⁹ With the emergence of non-*albicans* species of *Candida* worldwide, especially *C. glabrata* and *C. krusei*, antifungal drug resistance has become a major cause of concern in the management of candidemia. Resistance to fluconazole and other triazoles is very high among these species of *Candida*.²⁰ Other non-*albicans* *Candida* species like *C. tropicalis* and *C. parapsilosis* have been found to have variable susceptibility pattern to the azole group of drugs. There have been a few reports of *Candida* species being resistant to amphotericin B and echinocandins also.²¹ In our study we have seen that The majority of the patients were in the age group of 60-70 were 26.98%, followed by 50-60 were 20.63%, 40-50 were 19.05%, 70-80 were 14.29%, >80 were 11.11%, 30-40 were 7.94% The majority of the patients were male i.e. 55.56% followed by female were

44.44% The majority of the patients were associated with the factors like On Steroid therapy i.e. 55.56%, followed by Old age (>60) in 52.38%, Use of denture in 39.68%, H/o long term antibiotics in 30.16%, H/o Diabetes Mellitus in 23.81%, H/o immune-compromised disease in 17.46%, H/o long term admitted to ICU in 14.29%, H/o Smoking in 11.11%, K/c/o Cancer in 4.76%. These findings are similar to S Giri²² and *et al* they found total of 39 *Candida* isolates were isolated during the study period of 1 year (prevalence of 0.65%). The risk factors commonly associated with candidemia patients were long term antibiotic therapy (64.1%), use of central venous catheters (56.4%), urinary catheters (53.9%), steroid therapy (35.9%) and diabetes mellitus (33.3%).

CONCLUSION

From our study it can be concluded that the majority of the patients were old aged and associated factor were like patient of Steroid therapy followed by Old age, Use of denture, H/o long term antibiotics, H/o Diabetes, bed ridden patient, H/o immune-compromised disease Smoking, Cancer.

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