

ORIGINAL ARTICLE

Assessment of Oral Mucosal Lesions among Anaemic Patients of Jammu population: An Observation Study

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ABSTRACT:

Background: The oral manifestations of anaemia must be properly recognized if the patient is to receive appropriate diagnosis and referral for treatment. Hence; we assessed the prevalence of oral lesions among anaemic patient of known population. **Materials & methods:** The present study included assessment of prevalence of oral manifestations among anaemic patients of Jammu population. A total of 50 anaemic patients were included in the present study. We obtained complete demographic details in all the patients. Oral examination of all the patients was carried out to assess the presence and prevalence of oral manifestations. All the results were analysed by SPSS software. **Results:** A total of 50 anaemic patients were included in the present study. Common oral manifestations of anaemic patients observed in the present study included atrophic glossitis, angular stomatitis, burning sensation of the tongue, pallor of oral mucosa and atrophy of filliform papillae. **Conclusion:** Pallor of oral mucosa and atrophic glossitis are the most common oral manifestation of anaemia.

Key words: Anaemia, Oral lesions, Population

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INTRODUCTION

Iron is an important element of the body and is involved in many physiological processes. Most of the iron is in the erythrocytes as hemoglobin, although iron is found in many of the proteins involved in the utilization of oxygen. Iron deficiency is the most prevalent single nutrient deficiency and is worldwide the most common cause of anemia.¹⁻³ Nonhematological manifestations of iron deficiency may give rise to unpleasant symptoms such as fatigue, reduced physiological endurance, difficulty in regulating temperature, decreased cognitive performance and many more.^{4,5}

The manifestations must be properly recognized if the patient is to receive appropriate diagnosis and referral for treatment. The importance of understanding the orofacial manifestations of these disorders also lies in the fact that orofacial signs and symptoms may be the first clinical presentation that alerts the dentist/hematologist to an underlying hematological disorder.^{6,7} Disorders of the erythroid (anemia and polycythaemia), lymphoid and megakaryocytic-platelet compartment of the bone marrow, immune system deficiencies, coagulation as well as human immunodeficiency virus infection have been widely reported to manifest in the orofacial region.^{8,9} Hence; we assessed the prevalence of oral lesions among anaemic patient of known population.

MATERIALS & METHODS

The present study was planned in the department of oral pathology and it included assessment of prevalence of oral manifestations among anaemic patients of Jammu population. Written consent was obtained from all the

patients after explaining in detail the entire research protocol. A total of 50 anaemic patients were included in the present study. Exclusion criteria for the present study included:

- Patients with history of any other systemic illness,
- Patients with any known drug allergy,
- Patients with history of any other metabolic disorder

Blood investigations of all the patients were carried out in all the patients to confirm the diagnosis of anaemia. We obtained complete demographic details in all the patients. Oral examination of all the patients was carried out to assess the presence and prevalence of oral manifestations. All the results were analysed by SPSS software. Univariate regression curve was used for evaluation of level of significance.

RESULTS

A total of 50 anaemic patients were included in the present study, among which 30 were females while the remaining 20 were males. Mean age of the patients of the present study was 40.5 years. Common oral manifestations of anaemic patients observed in the present study included atrophic glossitis, angular stomatitis, burning sensation of the tongue, pallor of oral mucosa and atrophy of filliform papillae. Among these manifestations, the most commonly observed lesions were pallor of oral mucosa and atrophic glossitis seen to be present in 76 percent and 60 percent of the anaemic patients respectively.

Table 1: Demographic details

Parameter	Value
Number of subjects	50
Mean age (years)	40.5
Males	20
Females	30

Graph 1: Demographic details

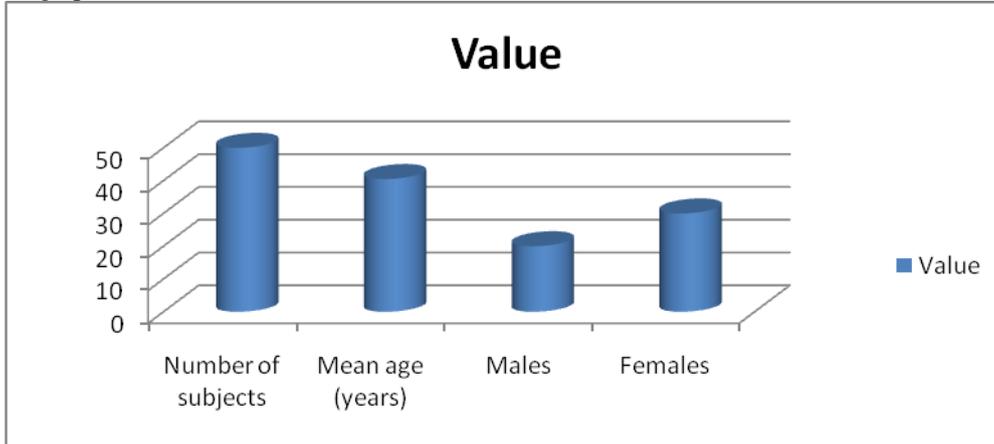


Table 2: Prevalence of oral lesions among anaemia patients

Oral manifestation	Number of patients	Percentage
Atrophic glossitis	30	60
Angular stomatitis	24	48
Burning sensation of the Tongue	26	52
Pallor of oral mucosa	38	76
Atrophy of filliform papillae	22	44

DISCUSSION

In the present study, we assessed a total of 50 anaemic patients. Common oral manifestations of anaemic patients observed in the present study included atrophic glossitis, angular stomatitis, tongue manifestations, pallor of oral mucosa and atrophy of filliform papillae. Among these manifestations, the most commonly observed lesions were pallor of oral mucosa and atrophic glossitis seen to be present in 76 percent and 60 percent of the anaemic patients respectively. Wu YC et al evaluated whether anaemia patients had specific oral manifestations and a particular blood profile compared to normal controls. The oral manifestations and mean red blood cell (RBC) count, corpuscular cell volume, RBC distribution width, Mentzer index, and Green and King index as well as blood concentrations of hemoglobin, iron, total iron binding capacity, vitamin B12, folic acid, and homocysteine in 75 anaemia patients and in 150 age- and sex-matched healthy controls were measured and compared. Anaemia patients had significantly higher frequencies of all oral manifestations than healthy controls ($p < 0.001$ for all), in which burning sensation of oral mucosa (76.0%), lingual varicosity (56.0%), dry mouth (49.3%), oral lichen planus (33.3%), and atrophic glossitis (26.7%) were the five leading oral manifestations for anaemia patients. Moreover, anaemia

patients had significantly lower mean hemoglobin level, RBC count, corpuscular cell volume, Mentzer index, iron level, and vitamin B12 level ($p < 0.001$ for all except $p = 0.003$ for vitamin B12) as well as significantly higher mean RBC distribution width, Green and King index and total iron binding capacity level ($p < 0.001$ for all) than healthy controls. However, no significant difference in the mean blood folic acid or homocysteine level was found between 75 anaemia patients and 150 healthy controls. Anemia patients have specific oral manifestations and a particular blood profile compared to normal controls.¹⁰ Wang YP et al evaluated whether thalassemia trait (TT) patients had specific oral manifestations and a particular blood profile compared with normal individuals. The oral manifestations and mean red blood cell count, corpuscular cell volume, red blood cell distribution width, Mentzer index, and Green and King index as well as blood concentrations of hemoglobin, iron, total iron binding capacity, vitamin B12, folic acid, and homocysteine in 65 TT patients and in 130 age- and sex-matched healthy controls were measured and compared. TT patients had significantly higher frequencies of all oral manifestations than healthy controls ($p < 0.001$ for all), in which burning sensation of oral mucosa (90.8%), lingual varicosity (90.8%), dry mouth (72.3%), atrophic

glossitis (32.3%), and numbness of the oral mucosa (30.8%) were the five leading oral manifestations for TT patients. Moreover, TT patients had significantly lower mean hemoglobin level, corpuscular cell volume, Mentzer index, and Green and King index ($p < 0.001$ for all) as well as significantly higher mean red blood cell count and red blood cell distribution width ($p < 0.001$ for both) than healthy controls. However, no significant difference in the mean blood iron, total iron binding capacity, vitamin B12, folic acid, or homocysteine levels was discovered between 65 TT patients and 130 healthy controls. TT patients have specific oral manifestations and a particular blood profile compared to normal individuals.¹¹ Chang JY et al assessed the hematinic deficiencies and anemia statuses in oral mucosal disease patients with FAD (defined as folic acid ≤ 6 ng/mL). The blood hemoglobin (Hb), iron, vitamin B12, and folic acid concentrations, serum gastric parietal cell antibody level, and mean corpuscular volume (MCV) in 198 oral mucosal disease patients with FAD were measured. Based on World Health Organization (WHO) criteria, anemia or Hb deficiency was defined as having an Hb concentration of <13 g/dL for men and <12 g/dL for women. In this study, macrocytic anemia due to FAD was defined as having an MCV ≥ 100 fL and folic acid ≤ 6 ng/mL; pernicious anemia as having MCV ≥ 100 fL, vitamin B12 < 200 pg/mL, and serum gastric parietal cell antibody positivity; iron deficiency anemia as having MCV < 80 fL and iron < 60 μ g/dL; and thalassemia trait as having MCV < 74 fL, red blood cell (RBC) count $> 5.0 \times 10^{12}/L$, and Mentzer index (MCV/RBC) < 13 . They found that by WHO definitions, 73 (36.9%), 41 (20.7%), and 10 (5.1%) of our 198 FAD patients had concomitant Hb, iron, and vitamin B12 deficiencies, respectively. Of 73 anemic FAD patients, three had macrocytic anemia due to FAD, one had pernicious anemia, 14 had iron deficiency anemia, eight had thalassemia trait, and the resting 47 had normocytic anemia. In addition to macrocytic anemia (2.0%), FAD patients may have concomitant normocytic (23.7%) or microcytic (11.1%) anemia.¹²

CONCLUSION

Under the light of above mentioned results, the authors conclude that pallor of oral mucosa and atrophic glossitis are the most common oral manifestation of anaemia. However; further studies are recommended.

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