

## Prevalence of anemia in periodontal patients

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### ABSTRACT

**Aim:** The aim of this study was to estimate the prevalence of anemia in patients with periodontitis. **Materials and Methods:** This study was carried out in 50 subjects with periodontitis reporting to Saveetha Dental College and Hospital seeking for dental treatment. It includes 30 females and 20 males. Hemoglobin count was estimated for those 50 subjects, and the data are tabulated for statistical analyses. A written consent was obtained from each subject for participation in the study. Patients with the chief complaint of periodontitis and age >25 years were included in the study. Patients with any kind of blood-related disorders and dengue were excluded from the study. **Results:** Of 30 females, 16 have lower hemoglobin count, and among 20 males, 9 had lower hemoglobin count that accounts for 53.3% of females and 45% of males. Consequently, among the 50 subjects, 50% were estimated to have lower hemoglobin count than normal. **Conclusion:** Patients presenting with periodontitis showed a systematic decrease in hemoglobin level. From the present study, it may be concluded that severe chronic periodontitis is strongly associated with anemia. This should be taken into consideration during periodontal surgery. Before that, it is important to get physician's consent and proper precautions to be taken to avoid any medical emergencies.

**KEY WORDS:** Anemia, Hemoglobin count, Periodontitis

### INTRODUCTION

Chronic periodontitis is an infectious, inflammatory disease caused by the bacteria of the dental plaque, resulting in the progressive destruction of the tissues that supports the teeth, i.e., gingival, the periodontal ligament, cementum, and the alveolar bone. Anemia is a state of condition; here, the hemoglobin levels are lower than the normal range. The normal range of hemoglobin is 12.0–15.0 mg/dl in females and 13.0–17.0 mg/dl in males. Anemia occurs not only due to bone marrow deficiency and micronutrients deficiency (iron, zinc, and Vitamin B complex) but also due to chronic infections, inflammatory conditions, and neoplastic disorders.<sup>[1]</sup> Previous literature have stated the prevalence of anaemia in periodontal patients.

### MATERIALS AND METHODS

This study was carried out in 50 subjects with periodontitis reporting to Saveetha Dental College and Hospital seeking for dental treatment. It includes 30 females and 20 males. Hemoglobin count was estimated for those 50 subjects, and the data were tabulated for statistical analyses. A written consent was obtained from each subject for participation in the study.

#### Inclusion Criteria

The following criteria were included in the study:

- Persons within the age group of 30–60.
- Chronic periodontitis patients.

#### Exclusion Criteria

The following criteria were excluded from the study:

- Immunocoproised patients.
- Patients with other bleeding disorders.

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## RESULTS

Of 30 females, 18 have lower haemoglobin count, and among 20 males, 9 had lower hemoglobin count that accounts for 60% of females and 45% of males. Consequently, among the 50 subjects, 50% were estimated to have lower hemoglobin count than normal.

## DISCUSSION

Some studies reveal that low hemoglobin count is associated with blood loss. The blood loss may be due to menstrual bleeding, bleeding from a wound, digestive or urinary tract, or frequent blood donations. Chronic periodontitis is an infectious, inflammatory disease caused by the bacteria of the dental plaque, resulting in the progressive destruction of the tissues that supports the teeth, i.e., the gingival, periodontal ligament, cementum, and alveolar bone.<sup>[1]</sup>

In the present study consisting of 50 subjects including 20 males and 30 females, about 16 females and 9 males are found to have lower hemoglobin count than normal. This accounts for 60% of females and 45% of males with anemia and a total of 27 of 50, i.e., 54% of subjects with periodontitis are found have anemia.

The pathogenesis of periodontal disease is mediated by inflammatory response to the bacteria in the dental film by generating an inflammatory cell infiltrate in the tissue subjacent to the periodontal pocket. There is deregulation of inflammatory, and immune pathways lead to chronic inflammation, tissue destruction, and progression of the disease.<sup>[2]</sup>

In inflammation, there is excessive production of cytokines that directly acts on the bone marrow and suppress the erythropoiesis. Inflammatory cytokines activate macrophages. These activated macrophages

ingest and destroy the erythrocytes prematurely. This process subsequently leads to anemia.<sup>[3,4]</sup>

Earlier studies reported that the prevalence of anemia in periodontitis by few authors suggested that anemia was one of the causes of destructive periodontitis not a consequence.<sup>[5-7]</sup> In the literature, early studies, anemia is defined as a state of reduced Hb concentration, reduced number of circulating erythrocytes in the blood, or both.

## CONCLUSION

Patients presenting with periodontitis showed a systematic decrease in hemoglobin level. From the present study, it may be concluded that severe chronic periodontitis is strongly associated with anemia. This should be taken into consideration during periodontal surgery. Before that, it is important to get physician's consent and proper precautions to be taken to avoid any medical emergencies.

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