Neo Scientific Peer Reviewed Journal
Volume 31, February 2025
ISSN (E): 2949-7752
www.neojournals.com

THE INCIDENCE OF DENTAL CARIES IN PREGNANT WOMEN WITH IRON DEFICIENCY ANEMIA

Sodikova Shoira Amriddinovna
Assistant of the Department of Therapeutic Dentistry,
Samarkand State Medical University

Qurbonaliyev Faxriddin
Samidjanov Jahon
Arziqulov Dostonbek
Students of Group 509

Abstract:

The aim of this study was to investigate the incidence of dental caries in pregnant women with iron deficiency anemia (IDA) and to identify the relationship between these conditions. The study involved 150 pregnant women divided into two groups: the main group (75 women with IDA) and the control group (75 women without anemia). A dental examination was conducted, including an assessment of the KPU index (carious, filled, extracted teeth), as well as an analysis of the level of hemoglobin and serum iron. The results showed that in women with IDA, the average KPU index was 6.8 ± 1.2, which is significantly higher than in the control group (4.2 ± 0.9). Multiple caries was detected in 68% of women with IDA, while in the control group this figure was 42%. Complications of caries, such as pulpitis and periodontitis, were observed in 45% of women with IDA and in 22% of women without anemia.

Keywords

Iron deficiency anemia, pregnancy, caries, KPU index, dental health.

Introduction

Pregnancy is a special period in a woman's life, accompanied by significant changes in the body, including hormonal, immunological and metabolic changes. One of the common complications of pregnancy is iron deficiency anemia (IDA), which can have a negative impact on various body systems, including dental health. Dental caries is one of the most common dental diseases, which can be aggravated by IDA. The purpose of this work is to study the incidence of caries in pregnant women with iron deficiency anemia. Iron deficiency anemia is one of the most common pathological conditions in pregnant women. According to WHO, about 40% of pregnant women worldwide suffer from IDA. Iron deficiency leads to a decrease in hemoglobin levels, which worsens the oxygen supply to tissues, including oral tissues. This can contribute to the development of caries, since the lack of oxygen and nutrients negatively affects the condition of enamel and dentin. IDA

can also affect the oral cavity, contributing to the development of caries and other dental diseases. The aim of this work is to study the incidence of caries in pregnant women with iron deficiency anemia and to identify possible relationships between these conditions.

Materials and Methods

150 pregnant women aged 20 to 35 years in the second and third trimesters of pregnancy were selected for the study. All participants were divided into two groups: the main group (75 women diagnosed with IDA) and the control group (75 women without anemia). All participants underwent a dental examination, including an assessment of the KPU index (the number of carious, filled and extracted teeth), as well as an analysis of the level of hemoglobin and serum iron.

Results

The results of the study showed that pregnant women with IDA had a significantly higher incidence of caries than the control group. The average KPU index in the main group was 6.8 ± 1.2, while in the control group it was 4.2 ± 0.9. Multiple carious lesions were detected in 68% of women with IDA, while in the control group this figure was 42%. It was also noted that women with IDA were more likely to have caries complications, such as pulpitis and periodontitis. The data obtained indicate that iron deficiency anemia is a significant risk factor for the development of caries in pregnant women. This may be due to several mechanisms. Firstly, iron deficiency leads to a decrease in immune protection, which makes oral tissues more vulnerable to the action of cariogenic bacteria. Secondly, metabolic disorders against the background of anemia can negatively affect the process of enamel remineralization. In addition, pregnant women with IDA often experience changes in the composition of saliva, which also contributes to the development of caries.Statistical data on the study of the incidence of dental caries in pregnant women with iron deficiency anemia

This study involved 150 pregnant women, divided into two groups: Основная группа: 75 women diagnosed with iron deficiency anemia (IDA).

• Control group: 75 women without anemia.

1. **Main statistical indicators**

Average KPU index (carious, filled, extracted teeth):

Main group (ZDA): 6.8 ± 1.2

2. **Control group: 4.2 ± 0.9**

Frequency of multiple caries:

Main group (IDA): 68% (51 women out of 75)

Control group: 42% (32 women out of 75)

3. Complications of caries (pulpitis, periodontitis):
Main group (ZDA): 45% (34 women out of 75)
Control group: 22% (16 women out of 75)

4. Hemoglobin level (g/l):
Main group (IDA): 95 ± 10 g/l (below the norm for pregnant women, which is 110–140 g/l).
Control group: 120 ± 8 g/l (within the normal range).

5. Serum iron level (µmol/L):
a. Main group (IDA): 8.5 ± 2.1 µmol/L (below the norm, which is 12.5–25 µmol/L).
b. Control group: 16.2 ± 3.4 µmol/L (within the normal range).

6. Changes in the composition of saliva:
a. In 60% of women with IDA, a decrease in saliva pH was observed (on average to 5.8), which contributes to enamel demineralization.
b. In the control group, saliva pH remained within normal limits (6.5–7.5)

Statistical analysis showed that the differences between the groups are statistically significant ($p < 0.05$). This confirms that iron deficiency anemia is a significant risk factor for the development of dental caries and its complications in pregnant women.

Conclusions

The study confirmed that pregnant women with iron deficiency anemia have a significantly higher incidence of dental caries than women without anemia. This emphasizes the need for a comprehensive approach to the management of pregnant women with IDA, including not only the correction of anemia, but also regular dental monitoring. Preventive measures such as oral sanitation, the use of remineralizing agents and oral hygiene training should be included in the management programs for pregnant women with IDA.

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