



FEATURES OF THE PREVALENCE OF LATENT IRON DEFICIENCY IN PREGNANT WOMEN IN THE SURKHANDARYA REGION AND ITS IMPACT ON PERINATAL OUTCOMES

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Introduction. Latent iron deficiency (LID) in pregnant women is a hidden predictor of severe hematological complications, characterized by tissue iron depletion with normal hemoglobin levels. In the Surkhandarya region, LID is highly prevalent due to arid climate stress, dietary habits, and high parity with short intergenetic intervals. Untimely diagnosis leads to tissue sideropenia, impaired uteroplacental blood flow, and chronic fetal hypoxia. Developing comprehensive approaches to predict its impact on perinatal outcomes is crucial for the region's healthcare.

Objective. To analyze the prevalence of latent iron deficiency in pregnant women in the Surkhandarya region, evaluate its impact on perinatal outcomes, and identify significant diagnostic criteria for predicting obstetric complications.

Materials and Methods. A prospective study evaluated 80 pregnant women in the II–III trimesters with normal hemoglobin ($Hb \geq 110$ g/L) and reduced serum ferritin (≤ 30 $\mu\text{g/L}$). Patients were divided into 3 groups: mild LID (ferritin 20–30 $\mu\text{g/L}$, $n=30$), moderate LID (12–19 $\mu\text{g/L}$, $n=28$), and severe LID (<12 $\mu\text{g/L}$, $n=22$). The control group included 25 healthy pregnant women. Serum iron, ferritin, transferrin, and TIBC were measured via ELISA, and uterine artery resistance index (RI) was assessed using Doppler ultrasonography. Risk prediction was based on multivariate regression analysis.

Results. Severe LID was significantly associated with high parity (≥ 3 births) and an intergenetic interval < 2 years ($p < 0.01$). Iron depletion directly correlated with increased uterine artery RI. In the severe LID group, the incidence of placental dysfunction and chronic fetal hypoxia was 4.2 times higher than in the control group. Fetal growth restriction (FGR) occurred in 18.6% of severe LID cases, and preterm birth in 12.4%. ROC analysis showed that a combined decrease in ferritin < 15 $\mu\text{g/L}$ and elevated uterine artery RI highly predicts placental insufficiency (sensitivity 84%, specificity 88%, $AUC=0.85$). Correlation analysis confirmed a strong link between tissue sideropenia and placental ischemia ($p < 0.01$).

LID under regional climatic and demographic loads significantly triggers placental insufficiency. Ferritin screening identifies hidden sideropenia at the subclinical stage. Combining iron metabolism and hemodynamic assessments enables early prevention of perinatal losses.



Conclusions. Ferritinometry combined with Doppler ultrasonography is a key biomarker for predicting placental dysfunction in the Surkhandarya region. Based on these criteria, women with LID should be assigned to a high-risk dispensary group. For LID correction, modern iron supplements combined with antioxidant and angioprotective therapy are recommended to optimize antenatal care and reduce regional perinatal morbidity.