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## Clinical and Hematological Features of Iron Deficiency Anemia during Pregnancy

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**Relevance.** In some pregnant and postpartum women, a decrease in hemoglobin and erythrocyte levels is not indicative of anemia due to physiological hemodilution. By late pregnancy and in the early postpartum period, nearly every woman develops latent iron deficiency, and 30–40% of them progress to anemia. Therefore, determination of hemoglobin (Hb) levels alone is insufficient for diagnosing iron deficiency anemia (IDA); additional hematological parameters should also be evaluated.

**Objective of the study.** To investigate the biochemical blood parameters in pregnant women with IDA. A total of 32 women at gestational ages ranging from 25 to 41 weeks were examined. Among them, 14 were primigravidas, 6 were multigravidas, and 12 were multiparas. All patients were admitted to the Department of Pregnancy Pathology at the Regional Perinatal Center of Bukhara.

**Materials and methods.** IDA of mild severity (Hb 109–90 g/L) was diagnosed in 20 women, moderate severity (Hb 89–70 g/L) in 8 patients, and severe IDA (Hb <70 g/L) in 4 pregnant women. The patients' ages ranged from 16 to 38 years (mean 25.3±1.4 years). Iron metabolism studies were performed in the biochemical laboratory of the city hospital. Diagnostic parameters included serum iron concentration, total iron-binding capacity (TIBC), latent or unsaturated iron-binding capacity (UIBC), and transferrin saturation index. Serum iron and TIBC were determined using commercial kits ('Lachema,' Czech Republic).

**Results.** Determination of serum iron plays an important role in the diagnosis of anemia (values <12.5 µmol/L indicate IDA). To obtain reliable results, patients discontinued iron supplements for 5–7 days before testing. In our study, serum iron levels ranged from 2.2 to 15.9 µmol/L (mean 7.87±2.79 µmol/L). The more severe the anemia, the lower the serum iron concentration. However, this parameter is neither pathognomonic nor sufficiently sensitive or specific for anemia. It should be noted that serum iron alone is not a reliable indicator of hyposiderosis, as it decreases in any inflammatory process due to redistribution. To evaluate iron reserves in the body, TIBC was measured. The normal range is 30.6–84.6 µmol/L; in IDA, it increases. In our study, TIBC ranged from 45.6 to 99.2 µmol/L (mean 73.5±3.6 µmol/L). However, serum iron and TIBC do not always accurately reflect iron stores. UIBC, which significantly increases in IDA (normal ~50.2±4 µmol/L), is calculated as the difference between TIBC and serum iron. In pregnant women with IDA, UIBC ranged from 38.5 to 94.9 µmol/L (mean 63.4±3.8 µmol/L). Highly

informative parameters include serum transferrin concentration and transferrin saturation percentage. The transferrin saturation index (normal 16–54%) is significantly reduced in anemia. In our study, transferrin saturation ranged from 2.08% to 22.1% (mean  $10.17 \pm 1.4\%$ ).

**Conclusions.** Thus, studies of iron metabolism and transferrin in pregnant women with anemia demonstrate significant biochemical disturbances: decreased serum iron concentration, increased total and latent iron-binding capacity, and reduced transferrin saturation. These indicators show a direct correlation with the severity of anemia.

## REFERENCES

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