INTEGRATED PROGNOSTIC MODELING OF PREGNANCY OUTCOMES IN FIRST-TRIMESTER RETROCHORIAL HEMATOMA

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Relevance: Retrochorial hematoma remains one of the most frequent ultrasound findings during the first trimester and is commonly associated with clinical signs of threatened miscarriage. Although many pregnancies progress without complications, the presence of this condition significantly increases the risks of spontaneous abortion, placental insufficiency, preterm delivery, and fetal growth restriction. The absence of standardized prognostic algorithms highlights the need for a multidimensional approach that incorporates clinical presentation, ultrasound characteristics, and laboratory biomarkers to improve risk stratification.

Aim of the study: To determine the prognostic value of clinical manifestations, ultrasound parameters, and laboratory indicators in predicting pregnancy outcomes in women with retrochorial hematoma during the first trimester.

Materials and methods:A retrospective and prospective analysis of pregnant women diagnosed with retrochorial hematoma in the first trimester was performed. Ultrasound assessment included evaluation of hematoma size, location, dynamics, and its proportion relative to the gestational sac. Clinical symptoms such as vaginal bleeding and abdominal pain were recorded. Laboratory investigations involved hormonal profiling (including progesterone levels) and assessment of hemostatic parameters (coagulation profile, platelet activity). Statistical analysis was used to identify predictors of adverse pregnancy outcomes.

Results and discussion: The study demonstrated that the prognostic significance of retrochorial hematoma depends not only on its presence but also on a combination of morphological and clinical factors. Larger hematoma size (especially exceeding 30–50% of the gestational sac volume) was strongly associated with increased risk of miscarriage. Posterior and fundal localization correlated with poorer outcomes, possibly due to impaired placental perfusion in these regions. Persistent or recurrent vaginal bleeding and pronounced pain syndrome were identified as clinical indicators of ongoing pathological processes.

Furthermore, dynamic ultrasound monitoring revealed that lack of hematoma regression over time is an independent predictor of adverse outcomes. Hormonal imbalance, particularly decreased progesterone levels, was linked to reduced trophoblastic support and increased uterine contractility. Alterations in the hemostatic system, including hypercoagulability or, conversely, hypocoagulation states, were associated with impaired placental development and progression of the hematoma.

The integration of these parameters into a comprehensive prognostic model significantly improves the accuracy of predicting pregnancy outcomes compared to isolated assessment of individual factors. This highlights the importance of a multidisciplinary approach combining obstetric evaluation, ultrasound monitoring, and laboratory diagnostics.

Conclusions: Retrochorial hematoma in early pregnancy should be considered not merely as an ultrasound finding but as a multifactorial prognostic condition requiring thorough evaluation. The combination of hematoma characteristics, clinical symptoms, and laboratory markers provides a reliable basis for risk stratification. Early identification of high-risk patients enables timely therapeutic interventions and closer monitoring, ultimately improving perinatal outcomes. The implementation of an integrated predictive approach in clinical practice may contribute to reducing the incidence of pregnancy complications associated with retrochorial hematoma.