

SCREENING TOOLS FOR PERINATAL OUTCOMES IN PREGNANT WOMEN COMPLICATED BY SUBCHORIONIC HEMATOMA

Shukurkhujeva D.N.

Associate Assistant of the Department of Obstetrics and Gynecology, Pediatric Gynecology
Tashkent Pediatric Medical Institute

<https://doi.org/10.5281/zenodo.11217623>

Abstract. Miscarriage remains a global problem in modern obstetrics. Subchorionic hematoma is a complication of early gestational bleeding that affects pregnancy outcomes. The value of ultrasound signs and maternal serum fetoprotein (MSAFP) levels are prognostic criteria for the prevention of perinatal complications.

Keywords: subchorionic hematoma, pregnant women, MSAFP, ultrasound, perinatal outcomes.

Vaginal bleeding before 24 weeks of gestation is known as "threatened miscarriage," and it is a common problem that affects 15–20% of viable pregnancies. To determine whether there is a viable intrauterine pregnancy, women who report discomfort and bleeding in the early stages of pregnancy are usually provided an ultrasound assessment. A lot of sonographers additionally report whether or not an intrauterine hematoma is present, in part to provide an explanation for the mother's symptoms and in part as a predictor of how the pregnancy will turn out in the future [1].

A common finding on regular obstetric ultrasound is a subchorionic hematoma. In the first trimester, it shows as a hypoechoic or anechoic crescent-shaped area behind the gestational sac; in the second trimester, it appears behind the fetal membranes. Its precise cause is unknown, however partial chorionic membrane detachment from the uterine wall is thought to be the cause [2]. Subchorionic hematoma incidence varies greatly in the literature, with documented cases ranging from 0.5% to 22% [3,4]. This discrepancy can most likely be attributed to variations in the definition, the gestational age of diagnosis, the populations examined, and the ultrasonography method and resolution employed. Studies have yielded inconsistent results regarding the clinical importance of subchorionic hematoma, a condition that was first reported by Manton and Pedersen in 1981 [5,6]. Subchorionic bleeding is thought to be an indication of underlying placental malfunction, which in turn causes preterm delivery, early rupture of the membranes, abruption, pre-eclampsia, and growth limitation in the fetus [7]. Nevertheless, while several research identified a link with unfavorable perinatal outcomes, others did not find one [8-12].

Several larger studies have been released recently to shed light on the connection between pregnancy outcomes and subchorionic hematoma [1,13,14].

It is unclear how an intrauterine hematoma resolves and whether this ultrasonography result has any bearing on prognosis. Depending on the gestational age at which the problem is reported, hematoma presence has been linked to a 4–33% miscarriage rate [6].

Early bleeding is linked to higher levels of maternal serum alfa-fetoprotein (MSAFP) in pregnancies that proceed, and it is known to contribute to erroneous risk assessment during biochemical screening for chromosomal and neural tube abnormalities [15]. High MSAFP levels (more than 2.5 multiples of the median [MoM]) are linked to a variety of pregnancy complications,

including fetal growth restriction (FGR), pregnancy-induced hypertension, and preterm labor, as well as an increased risk of intrauterine and neonatal mortality [16]. Threatened miscarriage and intrauterine hematoma are connected with a higher incidence of preterm labor and low birth weight, however, a link with problems such as premature rupture of membranes (PROM), FGR, and pregnancy-induced hypertension has not been established [5, 6, 17]. According to a recent comprehensive study, women who experience vaginal bleeding in the first trimester are more likely to develop maternal and neonatal problems [18]. Pearlstone et al. published a previous systematic review in 1993. The review included 14 studies, although only five had controls. Without doing a thorough meta-analysis, the authors found that subchorionic hematoma was linked to an increased risk of spontaneous abortion and premature birth. They correctly identified methodological flaws, such as the lack of controls in some trials and the insufficient reporting of patient characteristics [6].

Two trials used women with vaginal bleeding but no subchorionic hematoma as controls, others used asymptomatic women, or both [11, 19].

Recently, attention has been drawn to the significance of reactive oxygen species in obstetrics, specifically their role in preeclampsia and preterm prelabor membrane rupture, as well as the possibility of prophylaxis through the use of nutritional supplementation to avoid these pregnancy issues [20, 21]. Reactive oxygen species play a role in the etiology of early pregnancy loss, which has just lately become clear [22]; however, the link between impending miscarriage and later pregnancy difficulties could be explained in part by an increase in reactive oxygen species and chronic damage to the fetal membranes, resulting in poor placentation.

Approximately 3% of pregnant women will have an MSAFP of 2.5 MoM or greater during the second trimester [16]. Unexplained elevated MSAFP is present in about 1% of the obstetric population, and the raised MSAFP has been related to the majority of placental vascular diseases when the fetomaternal placental barrier breaks down, permitting increased transport of AFP into maternal serum, resulting in unusually high levels [16].

Furthermore, women with elevated MSAFP had an increased prevalence of positive Kleihauer-Betke stains, confirming that increased MSAFP levels are due to fetomaternal hemorrhage [23]. The true half-life of AFP in the blood circulation is roughly four to five days, this suggests that early pregnancy bleeding is linked to long-term villous barrier damage [24, 25]. First-trimester threatening miscarriage with a subchorionic hematoma on ultrasound has been linked to an increased risk of miscarriage, preterm labor, stillbirth, and placental abruption [8, 26-30].

These consequences are more common when bleeding occurs during the second trimester [19]. A meta-analysis found a link between vaginal bleeding and unfavorable pregnancy outcomes, however, there were differences in the reported risks and magnitudes of the association among studies [31]. Numerous publications have previously observed a link between the size of the hematoma and later complications [5,8]. This association is still contentious for women who arrive with a threatening miscarriage during the first trimester [4,6].

Subchorionic hemorrhage has the potential to have a variety of effects on pregnancy outcomes. A large hematoma, in theory, might endanger the pregnancy by exerting direct pressure on the volume of blood. This may be determined by the hematoma's location, distance from the placenta, and volume of the hematoma [5,32]. Bleeding during the first trimester, whether with or

without a hematoma, might cause a chronic inflammatory reaction in the decidua, leading to myometrial activity and pregnancy ejection [33].

It is known that poor placentation occurs in approximately two-thirds of early pregnancy failures, as evidenced by a weaker and fragmented trophoblast shell and diminished cytotrophoblast penetration of the lumen at the ends of the spiral arteries [34]. Later pregnancy complications, including hypertension, preterm labor, and, more recently, PROM, have been linked to poor placentation and lack of normal spiral artery invasion [35-37]. In a normal pregnancy, there is an increase in oxidative stress as the maternal circulation develops, which may play a physiological role in driving placental differentiation and regulating cell function [38]. As oxygen tension rises, so does the expression of antioxidant enzymes in placental tissues [39].

Premature perfusion of the intervillous space, as seen in subchorionic hemorrhage, before the development of placental adaptations to deal with oxidative stress, may be a contributing factor to pregnancy loss [38].

In conclusion, the findings show a small relationship between subchorionic hematoma and early and late pregnancy loss, preterm premature membrane rupture, and preterm delivery, as well as a more substantial association with placental abruption. These findings will be valuable when counseling ladies with subchorionic hematoma. Although there are presently no specific strategies to prevent these problems, patients' and physicians' vigilance will result in quick detection and therapy when they arise. Finally, given the study's heterogeneity, the likelihood of unfavorable perinatal outcomes should be considered in light of each patient's presentation and other risk factors.

REFERENCES

1. ДН Шукурхужаева, Молодежь и медицинская наука в XXI веке, 322-322
2. ДН Шукурхужаева, МОЛОДЫЕ УЧЕНЫЕ – МЕДИЦИНЕ МАТЕРИАЛЫ XVII НАУЧНОЙ КОНФЕРЕНЦИИ МОЛОДЫХ УЧЕНЫХ И СПЕЦИАЛИСТОВ С МЕЖДУНАРОДНЫМ УЧАСТИЕМ 25 мая 2018 года г. Владикавказ.. -2 бет, 2018-йил. ISBN 978-5-4358-0038-6
3. ДН Шукурхужаева, ТАЛАБАЛАР ИЛМИЙ ЖАМИЯТИНИНГ 42 – ИЛМИЙ - АМАЛИЙ АНЖУМАНИ ТЕЗИСЛАР ТЎПЛАМИ 2014 йил 24 апрель. -1 бет, 2014-йил.
4. ДНШ Э.Р. Тухватулина, Международный научный журнал «Молодой ученый» г.Казань, №11 (197) / 2018 -2 бет, 2018-йил. ISSN 2072-0297
5. ДНШ Ю.Г. Расуль-Заде, Ilmiy referativ, marifiy-manaviy jurnal TIBBIYOTDA YANGI KUN 7 (57) 2023 г.Ташкент, 2023.
6. ДНШ Ю.Г. Расуль-Заде, XXIV Всероссийский научно-образовательный форум Мать и дитя VII Съезд Акушеров-Гинекологов России, г. Красногорск 27-29 сентябрь 2023. 46- бет.. -1 бет, 2023-йил. ISBN 978–5–906484–73–4
7. ДНШ Ю.Г. Расуль-Заде, Международный научный журнал «Молодой ученый» г.Казань, №3 2020г.. -3 бет, 2020-йил. ISSN-L 2072-0297
8. ДНШ Ю.Г. Расуль-Заде, Ш.Р. Якубджановна Международная научно-практическая конференция «Дистанционные возможности и и достижения науки». г.Киев. 2020 г. - 1 бет, 2020-йил. ISSN: 2524-0935

9. МХТ Д.Н. Шукурхужаева, Ш.Т. Мухамедханова, Д.С. Юлдашева, Н.Б. Мирзаева, Международный научный журнал «Молодой ученый» г.Казань, №7 2022г.. -3 бет, 2022-yil. ISSN-L 2072-0297
10. НМИ Ю.Г. Расуль-Заде, Д.Н. Шукурхужаева, Международная научно-практическая конференция «Современные научные решения актуальных проблем». г.Ростов-на-Дону. 2020 г. -1 бет, 2020-yil. DOI http://doi.org/10.37057/R_1
11. ЮГ Расуль-Заде, АА Климашкин, Український хіміотерапевтичний журнал, 68-68
12. ЮГ Расуль-Заде, АА Климашкин, СК Усмонов, ДН Шукурхужаева, НМ Иргашева , МИНИСТЕРСТВО ЗДРАВООХРАНЕНИЯ РЕСПУБЛИКИ УЗБЕКИСТАНА ТАШКЕНТСКИЙ ПЕДИАТРИЧЕСКИЙ МЕДИЦИНСКИЙ ИНСТИТУТ, 2019, 189