NONIMMUNE HYDROPS FETALIS: UNRAVELING THE ETIOLOGY AND CLINICAL IMPLICATIONS

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Advances in prenatal imaging have led to earlier and more frequent diagnoses of NIHF, making it a critical area of study for obstetricians and pediatricians. NIHF can result from a variety of underlying conditions, including cardiovascular anomalies, chromosomal abnormalities, infections, and metabolic disorders. Understanding these diverse causes is essential for effective management and counseling. The prognosis for fetuses with NIHF varies widely based on the underlying cause. Research into prognostic factors can inform clinical decision-making and improve outcomes for affected infants. Emerging therapies, such as fetal interventions and improved prenatal care strategies, are being developed to manage NIHF more effectively, highlighting the need for ongoing research.

Non-immune hydrops fetalis is recognized as a complex polyetiological disease that can be caused by more than 150 different conditions. Despite the wide variety of causes, in 18% of cases it is not possible to determine the specific etiological factor of the disease [2].

With non-immune fetal hydrops, the miscarriage and stillbirth rate reaches 95%. The prognosis is unfavorable, but the cause of the disease and the time of onset of symptoms play an important role [1,5].

All of the above allows us to think that a clear definition of the management of patients with non-immune hydrops fetalis makes the presented problem extremely relevant and promising.

The objective of this study is to examine and analyze the medical histories of patients diagnosed with nonimmune hydrops fetalis.

Materials and Methods: This study involved both retrospective and prospective analyses. The retrospective component gathered data on the annual incidence of nonimmune hydrops fetalis (NHF), its causes, and patient outcomes. To align with the study's aims, participants in the prospective analysis were categorized into two groups: Group 1 included 20 pregnant women with NHF who underwent intrauterine treatment methods, while Group 2 comprised 22 pregnant women with NHF who opted out of treatment.

Results. The causes of the disease were identified in 59% of cases in the retrospective group and in 86.2% in the prospective group. Chromosomal abnormalities were found in 9 patients, with trisomy 21 being the most prevalent. All chromosomal abnormalities were detected during the first half of pregnancy, indicating that nonimmune hydrops fetalis occurring early on is frequently associated with aneuploidy.

Another significant cause of nonimmune hydrops fetalis identified in the study was cardiovascular system pathology, with 57.1% of these cases exhibiting tachyarrhythmias. A comprehensive treatment regimen for nonimmune hydrops fetalis related to tachyarrhythmias was established, and all cases of tachyarrhythmias were found to be treatable.

In pregnant women who adopted an active approach, conservative therapies included antiviral treatments, immunoglobulin infusions, cardiotonic therapy, and antibacterial methods. Notably, immunoglobulin infusion was utilized for the first time in cases of nonimmune hydrops fetalis, yielding effective results in 7 out of 9 patients.

The study also reported that 55% of fetal surgical procedures, such as fetal paracentesis, thoracocentesis, and amnioreduction, were performed. The serous fluids obtained were analyzed in the laboratory, which informed subsequent treatment strategies.

In the next phase, pregnancy outcomes were evaluated. Among the participants, 27.4% delivered living children, all of whom were from Group 1, where active interventions were employed. During the period between 37 and 41 weeks, 45% of births occurred in Group 1, whereas no births were recorded in Group 2 during this timeframe ($p < 0.001$).

Conclusion. If active management is chosen and intrauterine treatment of the fetus is used, pregnancy with non-immune hydrops fetalis should be prolonged for as long as possible, preferably until full-term pregnancy. Preterm birth with nonimmune hydrops fetalis does not improve perinatal outcomes.

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