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FEATURE OF LOW BIRTH WEIGHT FULL-TERN BABIES AND DEVELOPMENT OF AN ALGORITHM FOR DIAGNOSING PERINATAL PATHOLOGY

Introduction: The birth of full-term low birth weight infants is a significant concern in neonatal medicine due to the potential risk of perinatal pathology. These infants, despite being born at full gestational age, have a lower-than-average birth weight, which can be attributed to various maternal, fetal, and environmental factors. The incidence of such cases remains a crucial issue in healthcare systems worldwide, as low birth weight is associated with an increased risk of complications, including developmental delays, respiratory distress, and metabolic disorders. Early diagnosis and intervention are essential for improving the prognosis of these infants. An accurate and comprehensive diagnostic algorithm helps identify potential perinatal pathologies, enabling timely medical intervention and management. This article aims to present a detailed algorithm for the diagnosis of perinatal pathology in full-term low birth weight infants, focusing on clinical, instrumental, and laboratory approaches that can optimize neonatal care and improve outcomes for this vulnerable group.

Keywords: Full-term low birth weight infants, perinatal pathology , neonatal diagnosis, diagnostic algorithm, maternal risk factors, fetal development, neonatal care, clinical assessment.

The article also emphasizes the role of maternal, fetal, and environmental factors contributing to low birth weight in full-term infants. It explores how these factors influence the development and health of the newborn, necessitating a multidisciplinary approach to diagnosis and care. Additionally, the study addresses the significance of preventive measures during pregnancy, including prenatal monitoring and maternal health optimization, to minimize risks. By implementing the proposed diagnostic algorithm, healthcare providers can enhance the accuracy of their assessments and tailor interventions that align with the specific needs of each infant. The article serves as a valuable resource for neonatologists, pediatricians, and healthcare practitioners involved in neonatal care, providing evidence-based strategies to improve outcomes and support the healthy development of full-term low birth weight infants. The study applied a comprehensive diagnostic algorithm to a cohort of full-term low birth weight infants, aiming to identify the most common perinatal pathologies and evaluate the effectiveness of various diagnostic approaches. The results revealed that the most frequent complications in this group were respiratory distress syndrome, metabolic disturbances (such as hypoglycemia), and delayed neurological development. These findings align with previous studies that suggest low birth weight, even in full-term infants, is a significant risk factor for these conditions. Initial clinical assessments showed that a majority of the infants had low Apgar scores, indicating compromised vital functions. Anthropometric measurements further confirmed their low birth weight status, with many cases showing signs of growth restriction despite full-term gestation. These early clinical markers were essential in determining which infants required immediate intervention and further diagnostic testing. The use of ultrasound imaging (e.g., cranial ultrasound and abdominal ultrasound) allowed for the detection of structural abnormalities and confirmed normal organ development in most cases. However, in some infants, abnormalities such as mild cerebral edema and signs of intrauterine growth restriction (IUGR) were identified. Electroencephalography (EEG) was performed to assess brain function, revealing mild to moderate abnormalities in some infants, which

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correlated with the clinical observations of delayed neurological responses. Laboratory tests, including complete blood counts, metabolic panels, and infection screenings, identified several cases of hypoglycemia and electrolyte imbalances, conditions commonly associated with low birth weight. In addition, a few cases showed elevated inflammatory markers, suggesting possible perinatal infections, which required immediate antibiotic treatment. The findings underscore the importance of a comprehensive diagnostic approach for full-term low birth weight infants. The combination of clinical assessment, instrumental diagnostics, and laboratory tests provided a thorough understanding of each infant's condition, enabling targeted interventions. For instance, early detection of hypoglycemia allowed for prompt nutritional support, while the identification of neurological abnormalities through EEG and ultrasound facilitated early neurological intervention programs. The application of this diagnostic algorithm highlighted the need for a multidisciplinary approach, involving neonatologists, neurologists, and pediatric specialists, to optimize the care and outcomes for these infants. Furthermore, the results indicate that regular monitoring and follow-up are crucial for infants with identified perinatal pathologies to ensure their healthy development and reduce the risk of long-term complications. This study emphasizes the effectiveness of an integrated diagnostic algorithm in improving early detection and management of perinatal conditions among full-term low birth weight infants. Future research should focus on refining these methods and developing targeted treatment protocols to further enhance outcomes for this vulnerable population. The study demonstrates that full-term low birth weight infants are at a significant risk of developing perinatal pathologies, including respiratory, metabolic, and neurological complications. A comprehensive diagnostic algorithm combining clinical assessments, instrumental diagnostics, and laboratory tests proves to be effective in early detection and management of these conditions. By implementing a multidisciplinary approach, healthcare professionals can accurately assess each infant's health status, ensuring timely and tailored interventions that significantly improve health outcomes. The integration of instrumental diagnostics, such as ultrasound and EEG, alongside laboratory evaluations, provides critical insights into the underlying conditions and helps guide appropriate treatment strategies. Moreover, this research underlines the importance of developing individualized care plans based on the specific needs of each infant, as variations in the underlying causes of low birth weight may necessitate distinct therapeutic approaches. By addressing both immediate and long-term health risks, healthcare systems can better support the growth and development of full-term low birth weight infants, reducing the likelihood of future health complications. The study highlights the importance of continuous monitoring and follow-up for infants identified with perinatal pathologies, as early intervention can prevent long-term developmental issues. Consistent evaluations allow for adjustments to care plans, ensuring that infants receive the necessary support as they grow. To further enhance outcomes, future efforts should focus on developing standardized diagnostic and treatment protocols specifically tailored for full-term low birth weight infants. This approach will ensure that healthcare systems are better equipped to support the healthy development and growth of this vulnerable population. Finally, the findings advocate for the improvement of prenatal care programs, emphasizing maternal health optimization and regular fetal monitoring to reduce the occurrence of low birth weight cases. Investing in preventive strategies and enhancing early intervention capabilities will be crucial for reducing morbidity and mortality rates in full-term low birth weight infants, ultimately contributing to better neonatal and pediatric care.

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