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From diagnosis to neonatal care: the delivery room as a key element in reducing mortality from congenital heart disease

*Do diagnóstico ao cuidado neonatal: a sala de parto como eixo da redução da mortalidade por cardiopatias congênitas**Del diagnóstico a la atención neonatal: la sala de partos como elemento clave en la reducción de la mortalidad por cardiopatías congénitas***Mariana Póvoa-Corrêa^{1,2}**¹ Universidade Federal do Rio de Janeiro (UFRJ), Macaé, RJ – Brasil.² Instituto D'Or de Pesquisa e Ensino (IDOR), Rio de Janeiro, RJ – Brasil. ORCID: <https://orcid.org/0009-0004-8017-7398>E-mail: emanuela.carvalho@ufsc.br

Over the past few decades, the prevalence of congenital heart disease at birth has remained high, although stable, ranging from 9.4 to 23 cases per 1,000 live births in different studies.^{1,2} These data confirm the epidemiological relevance of these conditions and reinforce the need for continuous training of pediatricians and neonatologists to manage a population that requires highly specialized diagnostic and therapeutic approaches. In the global panorama, Brazil shows significant progress, with a 77.3% reduction in mortality from congenital heart disease between 1990 and 2019, considering all age groups, a result associated with the expansion of access to diagnostic methods, the development of pediatric cardiology, and the progressive consolidation of reference centers.³

Despite this progress, neonatal mortality remains one of the main challenges in the care of children with congenital heart disease. In infants under 28 days old, congenital heart disease still are a significant cause of death, with substantial global rates (760.25 deaths per 100,000 live births), as evidenced by the 2021 Global Burden of Disease report.⁴ In Brazil, marked regional inequalities persist, with a higher concentration of diagnoses in the more developed regions, reflecting differences in access to qualified prenatal care, fetal echocardiography, and the organization of healthcare networks.⁵ This scenario reveals that the impact of technological advancement is limited when not accompanied by equity policies and effective integration between levels of care.

Even with improvements in surveillance systems, mortality rates are still higher than those observed in high-income countries and limitations in the quality of national data highlight the need for structuring strategies aimed at decentralizing specialized care and strengthening active case finding for early diagnosis. Recent evidence shows a low rate of prenatal diagnosis by fetal echocardiography in certain regions of the country, indicating failures in the articulation between prenatal care and high-complexity services.⁶ This gap compromises the timely referral of pregnant women and newborns to reference centers and reduces the potential impact of early diagnosis on morbidity and mortality.

It is in this context that the article “Main care in the delivery room and postnatal treatment of newborns with congenital heart disease”, published in this edition of the *Revista SOPERJ*, becomes particularly relevant. The narrative review systematizes fundamental clinical and pathophysiological evidence for the perinatal management of critical congenital heart diseases and arrhythmias with fetal and neonatal hemodynamic repercussions, offering a pedagogical synthesis oriented towards clinical practice and care planning.

By discussing the role of fetal echocardiography in delivery planning and perinatal risk stratification, the article demonstrates that prenatal diagnosis is not only a diagnostic resource, but an organizational determinant of care. The review explores risk stratification models, describes levels of care complexity in the delivery room, and details specific approaches for the main conditions with high clinical impact (hypoplastic left heart syndrome, transposition of the great arteries, Ebstein's anomaly, complete atrioventricular block, and fetal and neonatal tachyarrhythmias). By articulating pathophysiology, early clinical signs, and therapeutic strategies, the text highlights that the evolution of

the newborn with heart disease depends on the integration between prenatal diagnosis, immediate hemodynamic stabilization, pharmacological interventions, and invasive procedures performed in a timely manner.

The review also emphasizes that perinatal planning should simultaneously consider the risk of hemodynamic instability at birth, the availability of regional resources, and maternal obstetric conditions. By integrating these dimensions, the article reinforces the understanding that care for the newborn with heart disease is a continuous process that begins prenatally and is consolidated in the first hours of life.

Early diagnosis through fetal echocardiography and the systematic implementation of pulse oximetry testing are necessary, but not sufficient, conditions for reducing neonatal mortality from congenital heart disease. The decisive element lies in the quality of neonatal care, the organization of healthcare networks, and the responsiveness of the health system.^{5,6} The consolidation of integrated strategies for diagnosis, perinatal planning, and early intervention means not only a technical advance but also an essential condition for the sustainable reduction of neonatal morbidity and mortality. By translating complex evidence into applicable clinical guidelines, the article contributes to improving clinical practice and reaffirms that addressing congenital heart disease requires not only scientific innovation but also coherence between knowledge, organization of care, and commitment to equity.

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