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Care of the Newly Born Needs to Begin Prior to Birth and to Continue then After

Recent scientific progress has brought increasing clarity in our understanding of the etiopathogenesis, diagnosis, and the optimal management of many structural abnormalities and diseases that we see in newborn infants.[1] Many of these abnormalities have a prenatal onset and can now even be monitored *in utero* for progression and complications.[2,3] In these efforts, advanced imaging and analysis of fetal DNA in fetal/maternal blood has facilitated diagnosis, grading of severity, and, in many conditions, helped define indications for temporizing or definitive treatment prior to birth.[4-7] Such progress has been possible most notably in genetic, neurological, hepatobiliary, and hematological problems.[6] Initiation of care before such disorders get established and/or the onset of secondary complications can possibly make a difference.[8] In many conditions, there is now encouraging evidence for effectiveness of specific management performed *in utero* on immediate and medium/long-term outcomes.[9]

Early diagnosis is a key determinant of outcomes in most neonatal conditions.[10] The timing of disease onset may be particularly important because of the possibility of interruption in the structural and functional changes that are going on during that period of development.[3] Hence, serial imaging and/or laboratory tests can be used not only for monitoring fetuses/infants with known disease conditions but also for the evaluation of normal or hitherto asymptomatic fetuses/infants who have known familial or genetic risk factors.[3] Knowledge about the severity and extent of various abnormalities/diseases can help prepare for treatment procedures and counseling the families.[11] Most of these procedures are complex and need a multi-disciplinary approach for optimizing the outcomes.[12] The importance of preparing a closely knitted team and establishing a close relationship with the families is important as the possibility of adverse outcomes and even reproductive grief cannot be overlooked.[13] Transparency is a key word in this process. A paternalistic physician attitude is not acceptable; evidence-based, collaborative approaches are more appropriate for families and care-providers handling adverse outcomes.[7]

In the *Newborn*, our aim is to cover problems that a baby might develop *in utero*, the perinatal period, following birth, and the implications of these abnormalities during the first 1000 days after birth. In this 2nd issue of our journal, we present a set of articles that represent each of these subsets. The risk of perinatal mortality is a matter of universal concern. Shukla and Carlo[14] have reviewed the predictive accuracy of machine-learning statistical models for intrapartum stillbirth and neonatal mortality. Another article summarizes the information we have on the association between chromosomal abnormalities and neonatal necrotizing enterocolitis (NEC); the authors noted a possible association with abnormalities in chromosomes 1, 6, 15, 21, and 22.[15] The findings are not conclusive as the cohorts are not numerically-adequate in a statistical sense, but show the need for translational studies. In another study, Sun and Romano-Keeler[16] have reviewed the impact of early life microbial colonization on the development of the immune system, postnatal growth, and long-term health and disease.

Morotti *et al*.[17] examined the records of 289 infants with early-onset sepsis and noted the characteristics of neutrophil cell populations as recorded in automated hematology analyzers. The changes in neutrophil volumes showed moderate accuracy in identifying early-onset sepsis, but the high negative predictive value can be useful in reducing unnecessary administration of antibiotics. These observations are exciting as the information can be obtained as an extension of the complete blood counts that are performed routinely in the evaluation of infants with suspected sepsis. No extra blood samples will be needed.

Grewal *et al*.[18] discuss how neonatal acute liver failure is distinct from acute liver failure in older children and adults. There are important differences in etiology, clinical presentation, and the response to therapeutic interventions. In another article, Sharma and her colleagues[19] have reviewed normal platelet counts in neonates, the epidemiology and pathogenesis and of neonatal alloimmune thrombocytopenia (NAIT), the specific platelet antigens identified as targets in NAIT, and the approach for laboratory diagnosis of NAIT. The article is particularly interesting as it presents a detailed, methodological approach used in hematology laboratories.

Mishra and coworkers[20] review the most frequently-seen structural neurologic anomalies in infants of mothers with diabetes mellitus. The authors have provided information on structural neurologic malformations, cognitive disorders, motor deficits, and psychosocial disorders in these infants. And finally, there is an expert review on compassionate organization of grief care in the neonatal intensive care units.[21] Kathryn Grauerholz highlights the "human" components of treatment, and the supportive measures that the patients and their families need. The experience of parenting a critically-ill infant can be overwhelming and traumatic. These difficulties can be particularly difficult for parents who have previously endured a reproductive loss, as the distress can get compounded with lingering grief from a prior perinatal loss.

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