

To Save Babies, We Need a Team – Let’s Build One!

All over the world, infancy is a period marked by a high risk of morbidity and mortality.¹⁻³ And a death so early in life has implications – each time we lose an infant, we lose an entire life and all its potential.⁴ Advances in neonatal care have stimulated the development of multidisciplinary rehabilitation teams to provide supportive services for these patients.⁵ All of us understand the goals of improving outcomes of infants and families, but the aims and objectives may need to be tailored for individual centers, communities, and even countries.⁶⁻⁹ The panoramic truth is that to save babies, we need teamwork.¹⁰⁻¹²

In both high-acuity and/or limited-resource settings, we often need a wide array of medical providers, support services, and family members to interact dynamically and interdependently to care for newborn infants.^{13,14} Higher the acuity of illness, greater might be the need for “fluidity” with adaptive team membership.¹⁵ Based on philosophy, resources, and other considerations, the models of service delivery may have to be tailored for hospitals, communities, societies, and countries. We need to develop professional competence, collaboration, continuing education, effective communication, accountability, legislative support, and mutual respect that need to be focused on individual patients, families, and care units.¹⁶⁻¹⁸

Our journal, the *newborn* aims to cover fetal/neonatal problems that begin during pregnancy, start at the time of birth, or occur during the first 1000 days after birth. As in our previous issues, we present 8 important articles (Figure 1). In this 1st issue of the 3rd volume, we report three developments. Each one has the same message – to save babies, we need a team. *Let’s build one!*

- (a) Seventeen associations of care providers from all over the world are now collaborating with the Global Newborn Society (GNS) and have adopted the *newborn* as their official journal. In addition to the GNS, we are now the official mouthpiece for associations focused on Down syndrome, autism care, infant nutrition, and neonatal brain injury in infants from many countries, including (*East to West*) Bangladesh, India, Pakistan, Mongolia, Iran, Azerbaijan, Poland, Libya, Italy, Germany, the United Kingdom, Brazil, and the United States of America. One of the new participating associations spans the whole Islamic world. Could/should we say that what was once a small step for one baby is now evolving into a movement, possibly a longer leap for humankind?
- (b) We bring to you the statement from the Joint European Neonatal Societies’ (jENS) Congress that was held in Rome in September 2023.¹⁹ Each year, we lose nearly 1.9 million fetuses in stillbirths and about 2.3 million newborns.^{1,20} The vast majority of these deaths are recorded in the relatively disadvantaged peri-equatorial and tropical countries, and most are preventable. Many necessary, proven, and highly effective interventions are available but we will need to work together to improve usage/access to these save more babies and reach the 2030 Sustainable Development Goals (SDGs).²¹ To reach the SDG target of <12 neonatal deaths per 1000 live births,²² we need to invest smartly, implement sustainable programs, integrate our efforts, and innovate to improve the efficiency of these efforts;
- (c) March 21st is the World Down Syndrome Day – a global awareness day that has been officially observed by the United Nations since 2012.²³ We definitely need lots of socks²⁴ to express our solidarity, but we also need more original thinking to help these babies. In this issue, we present a report that may have important implications for clinical care. The authors provided care to a term²⁵ male infant with persistent patency of the *ductus arteriosus*. His fetal tests had shown some ambiguity for trisomy 21 but there were no phenotypic features typical of trisomy 21²⁶ *in utero*²⁷ or after birth²⁸ and the postnatal karyotype was reported as normal.²⁹ A repeat test that got requested after birth by chance showed mosaicism³⁰ for this aneuploidy.^{31,32} The mechanisms underlying the origin of trisomy 21 mosaicism are still unclear, and this report is a reminder that incidence of this condition in the community might be higher than our current state of knowledge. There is a need for further studies.

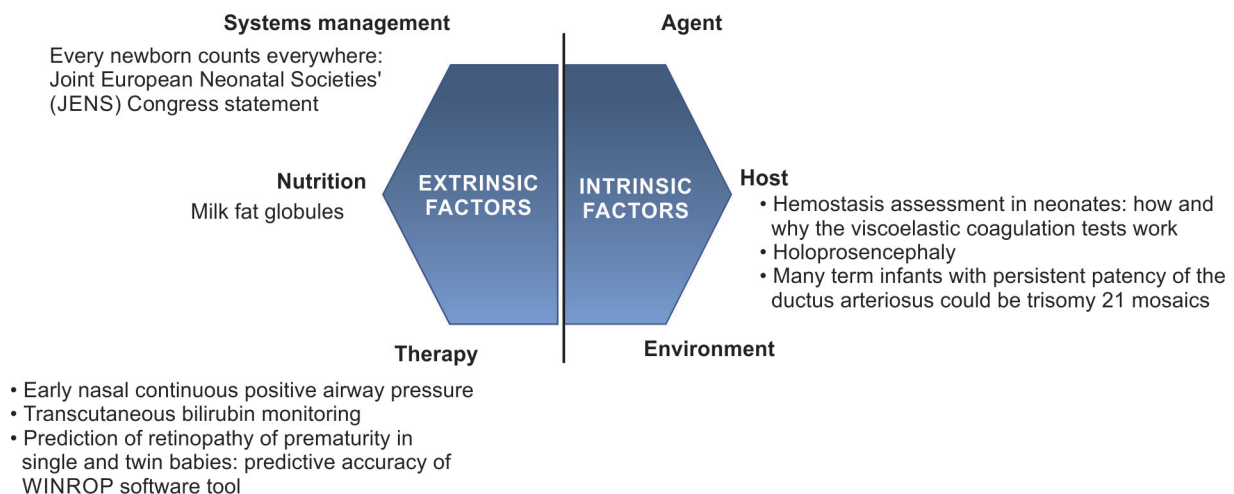


Fig. 1: **Areas of focus in the newborn, Volume 3, Issue 1.** We have expanded the traditional agent-host-environment trinodal disease model to a hexagonal system. The three additional foci represent extrinsic factors that can affect health—those originating in therapy, nutrition, and systems management. This issue covers 4 of these foci, namely host factors, treatment/monitoring systems, nutrition, and systems management.



There are 3 important original studies in this issue. Mohan *et al.*³³ investigated the effectiveness of a software tool to screen retinopathy of prematurity (ROP), the WINROP (*Weight, Insulin-like growth factor I, Neonatal ROP*) in a retrospective single-center study. They studied a cohort of 63 patients born at a median of 30 weeks' gestation with a birth weight of 1250 g. Twenty-two infants developed type 1 and 39 developed type 2 ROP. WINROP alarm was triggered in 33 (52.38%) infants. Pregnancy-induced hypertension (PIH), malnutrition, respiratory distress syndrome, blood transfusion, and anemia of prematurity were associated with the detection of ROP. The sensitivity, specificity, positive predictive value, and negative predictive value of WINROP to predict type 1 ROP were 63.6%, 53.6%, 42.4% and 73.3%, respectively. In its current stage of development, the tool has modest accuracy, but it might be useful alongside clinical screening for ROP in infants. These findings justify continued efforts to develop newer software-based predictive tools.

In another study, Sahota and coworkers³⁴ compared transcutaneous bilirubin levels on a covered, defined spot of skin with serum bilirubin levels prior to starting, during, and 2 days after discontinuing phototherapy in preterm and term newborns. They studied 272 babies with neonatal jaundice. Transcutaneous and total serum bilirubin levels showed statistically significant positive correlation before, during, and after discontinuing phototherapy in both preterm and term newborns. These findings are important as transcutaneous bilirubin may be a good noninvasive tool for monitoring infants with hyperbilirubinemia.

Hameed *et al.*³⁵ investigated whether timely institution of respiratory support with nasal continuous positive airway pressure (nCPAP)³⁶ could improve clinical outcomes in a limited-resource region of Iraq affected by chronic conflicts. They followed 123 preterm infants born at 26–32 weeks' gestation in a prospective cross-sectional study over a period of 6 months. These infants were treated with nCPAP soon after delivery or at admission in the neonatal intensive care unit. Early CPAP was successful in infants who were born at ≥ 28 weeks' gestation with a birth weight ≥ 1500 g, had received antenatal steroids, and did not have a history of premature/prolonged rupture of membranes. These infants had mild-looking respiratory disease on radiographs. Some had evidence of sepsis. Treated infants required surfactant and mechanical ventilation less frequently. Fewer infants had pulmonary hemorrhage. There was a significant reduction in mortality in these infants.

We bring to you 3 reviews. One of these, which is highlighted on the cover of this issue, is focused on milk fat globules (MFGs).³⁷ Human milk (HM) contains 3–5% fat, 0.8–0.9% protein, 6.9–7.2% lactose, and 0.2% mineral constituents.^{38,39} These nutrients are largely carried in MFGs composed of a triacylglycerol core enclosed in a triple membrane structure.⁴⁰ The membrane contains polar lipids, specialized proteins, glycoproteins, and cholesterol. MFGs release energy in the upper gastrointestinal tract and then persist for some time in the gut lumen so that the protective bioactive molecules are conveyed to the colon.⁴¹ These properties may shape the microbial colonization and innate immune properties of the developing intestine. There might also be possible roles in enhancing neurodevelopment, insulin sensitivity; and suppressing chronic inflammation.⁴² This review aims to update the readers about the composition, structure, and biological activities of MFGs.

In recent years, new approaches to neonatal hemostasis have been explored.⁴³ Most conventional coagulation tests have limitations as these are focused primarily on the procoagulant factors and do not inform about platelet function and the levels/activity of von Willebrand factor, natural anticoagulants, and fibrinolytic activity.^{44–47} In this scheme, viscoelastic coagulation tests can provide a panoramic assessment of the entire coagulation process from the formation to degradation of clots, platelet function, and fibrinolysis.⁴⁸ In this issue, Guaragni and Motta⁴⁹ have provided a comprehensive review of the potential benefits of viscoelastic tests in neonatal care; these tests can help identify premature/critically ill infants at higher risk of hemorrhage during routine care or after surgery and may need corrective transfusions with appropriate blood products.

Finally, this issue brings a detailed, updated review of holoprosencephaly (HPE).⁵⁰ As we know, HPE is a complex malformation reflecting failed or incomplete cleavage of the forebrain (prosencephalon) into right and left hemispheres, deep brain structures, and the olfactory and optic bulbs during the embryonic period.⁵¹ At birth, the prevalence of HPE is 1 in 8,000–10,000 live births and stillbirths.^{52–55} The etiopathogenesis is unclear, although both syndromic and isolated HPE can be heritable.⁵⁶ Syndromic HPE may involve multiple systems, including the central nervous system, eyes, hearing, olfactory, the gastrointestinal system, and the genital tracts.⁵¹ No specific treatment is known.⁵⁷ Careful clinical and genetic evaluation is necessary for symptomatic management and for counseling families.⁵⁸

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Akhil Maheshwari, MD
Kei Lui, MD
Mario Motta, MD