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Editorial

Integrating Neonatal Research and Neonatal Practice: A Crucial Step Forward

Of the paediatric population as a whole (children or adolescents less than 18 years of age), neonates (infants 28 days of age or less) account only for a tiny percentage (<1%). In contrast, within the eight public hospitals with deliveries in Hong Kong, perhaps a quarter to a third of the doctors working in paediatrics devote their time to neonatal medicine. This apparently disproportionate workload and interest dedicated to the first month of life is also reflected by the high proportion of paediatric publications devoted to newborn infants.

Clinicians who take care of newborn infants must be able to handle all aspects related to the care of the baby. From life-threatening illnesses to the medical problems of relatively healthy newborns, from respiratory diseases to infections to haematological problems. In this issue of the Hong Kong Journal of Paediatrics, we gather several papers¹⁻⁴ written by authors from around the world. Each paper focuses on an important research field within neonatology.

In the first article,¹ Çelik et al shed light on the haemolytic causes of neonatal jaundice and argue that minor blood group incompatibility is an important factor to consider in babies admitted for neonatal jaundice, especially in those who present relatively late and have rebound jaundice after termination of therapy. In the second article,² Chik et al describe the characteristics of newborn infants diagnosed with *Escherichia coli* meningitis over a five-year period and provides us with insights about the antibiotic resistance patterns within this population. This provides additional data which can help neonatal clinicians when deciding which antibiotics to use empirically. In the third article,³ Liao et al describe the results of a randomised controlled trial that investigates the impact of non-nutritive sucking and nesting as non-pharmacological pain interventions in preterm infants requiring eye examination. The data suggests that these relatively easy to implement measures could significantly improve validated pain scores and provides valuable data upon which units may base quality improvement programmes targeted at pain management. In the fourth article⁴ by Kim et al, a cohort of young children with cardiac tumours is described. While not all presenting within the neonatal period, many of the children were diagnosed antenatally and the authors believe that early diagnosis facilitates timely intervention during early infancy, or even the neonatal period, which could hopefully decrease the potential complications that may arise.

As can be seen from these articles, an important function of neonatal research is to improve our ability to care for our newborn patients. The investigators featured in this issue of our Journal have achieved this by painstakingly recording characteristics of patient cohorts with relatively well-defined conditions of interest and then analysing and presenting their data so that clinicians from around the world can learn and reflect on how to apply their findings to their own newborn patients. However, despite the overwhelming explosion of available data derived from studies from around the world, the data available are not always

applicable to our own population, whether because of differences in the clinical setting or the variations in characteristics between the study's patients and the patients under our own care. Hence even with good quality data, applying evidence to one's own patients may not be straightforward and it is often necessary to implement the findings in a systematic way by measuring outcomes after implementation and modifying the approach accordingly.

Another way that good practice can be disseminated and large sets of clinically relevant data collected, is by pooling data of clinically important neonatal characteristics and outcomes between large numbers of neonatal units. In this way, some of the limitations of small, single centre studies can be overcome. It has increasingly been recognised that it is an important part of continuous improvement for neonatal units to routinely measure important clinical outcomes for benchmarking in order to identify areas to focus quality improvement and research on. To this end, it has become increasingly apparent that joining well-designed neonatal networks with an emphasis on quality improvement⁵⁻⁷ may be the way forward as these multi-centre networks not only pave the way for big data analyses to tackle clinical important problems, but also serve as robust platforms for large-scale studies such as point-of-care trials⁸ which may provide insights that have eluded us despite decades of neonatal research.

HS Lam
Associate Editor

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