Correspondence

To the Editors

Is the term 'respiratory distress syndrome' and 'respiratory distress in term babies' the same entity?

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Dear Editors.
We read with great interest the article published in the 2022 December issue of the Sri Lankan Journal of Child Health by Amarasekara S, *et al* titled "Incidence, aetiology and adverse outcomes associated with respiratory distress in term neonates admitted to a tertiary care centre". The authors highlighted the incidence, aetiologies, characteristic features and outcomes of respiratory distress in term babes in the neonatal intensive care unit (NICU).

I would like to highlight some important points in this study.

1. The overall incidence of respiratory distress in term babies in NICU is around 6.8%-7.0%[1] but according to this study it is around 2.2%. The variation may be because the authors have considered the Silverman Anderson Score (SAS) and not included Downes score as an inclusion criterion for categorisation of respiratory distress in term babies. I want to highlight that this score is mostly used for preterm babies for the assessment of respiratory distress syndrome (RDS) and is more accurate when used for preterm babies. The Downes score was not mentioned or discussed anywhere in the study although it is one of the most widely used scores in the assessment of respiratory distress in term neonates. Both SAS and Downes scores can be used interchangeably in preterm babies but SAS is more reliable and more accurate in preterm babies for RDS. For the term baby and for overall respiratory distress, the Downe score is being widely used as it takes air entry and cyanosis into consideration, apart from other parameters. Both scores take different parameters into account[2]. Moreover, the SpO_2, the most common parameter being monitored in every NICU, was also not taken into consideration as a good parameter of the outcome of respiratory distress.

2. The incidence of RDS (not respiratory distress) in term babies is reported as 12 (11.4%), slightly on the high side. RDS is mainly due to surfactant deficiency and is an entity of preterm babies, its incidence increasing with the decrease in the gestational age and birth weight of the babies. RDS in term babies should not be confused with respiratory distress, which includes all babies with respiratory distress due to different underlying causes. The incidence of respiratory distress in term babies is very low (almost negligible) at gestational ages of 38-39 weeks[3]. However, elective lower segment caesarean section (LSCS), diabetes mellitus (DM) in mother and some mutations may increase the risk of RDS in term babies. It is very difficult to differentiate RDS in term babies from congenital pneumonia and transient tachypnoea in the newborn (TTN), as both have almost the same type of presentation. Moreover, the mere absence of positive blood cultures and absence of inflammatory markers do not rule out septicaemia, congenital pneumonia or TTN.

3. I am surprised that no cases of birth asphyxia were mentioned among the aetiological factors of respiratory distress as it is a common cause of NICU admission presenting with respiratory distress. Overall, 25-35% of patients with birth asphyxia develop respiratory complication during the course of their illness and stay in the NICU. The overall incidence of birth asphyxia is around 2 per 1000 live births in developed countries and it is almost 10 times more in developing countries. In this study, not even a single case with birth asphyxia as an aetiology has been reported, which raises a question on data collection. In a study conducted by Liu J, *et al*[4] among 125 patients with respiratory distress, 12 patients had birth asphyxia as the underlying cause.

4. One more thing I want to highlight is that the authors have stated that there was an association between congenital pneumonia and septicaemia with the vaginal examination, prolonged rupture of membranes (PROM), maternal fever and foul-smelling discharge, which could not be proved by p-values. We found that the p-value was significant for vaginal examination (p=0.008) and PROM (p= 0.044) but not for maternal fever (p=0.412) or foul-smelling liquor (p=0.230). So, a direct association cannot always be proved statistically. In this study, only two p-values were significant: one for 3 or >3 vaginal examinations and its correlation with congenital pneumonia, sepsis and the other for elective LSCS for its correlation with RDS in term babies (the association of elective LSCS with RDS was found to be significant (p-value <0.0001) with odds ratios of 37.272 [95% CI 7.205-192.818] but the association of DM was found to be significant with p-value 0.03). This point needs further elaboration. Overall, 83.3% of babies who developed RDS were born by elective LSCS. I fully agree with the author's finding that the incidence of respiratory distress in term babies was significantly higher in babies who were born through elective LSCS[5].

Thanks for publishing and highlighting the topic of respiratory distress in term babies and updating our knowledge.

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Response by authors of article

Dear Editors.
I appreciate the ardour that Dr. Lakra has shown towards the above article and for the detailed explanations related to the above.

1. I agree with Dr. Lakra's explanation of different scores of severity assessment of respiratory distress. In our unit, which is a tertiary care centre, the practice is to use the Silverman Anderson Score (SAS) and hence we decided to enrol patients based on SAS as all doctors are familiar with it. Perhaps, we should gradually move towards the Downes score. The difference in incidence of respiratory distress is most probably due to the differences in inclusion criteria. Respiratory distress is defined as presence of one or more of the following signs viz. tachypnoea, apnoea, chest retractions (intercostal, subcostal, suprasternal), nasal flaring, inspiratory stridor, grunting and cyanosis[1]. We did enrol babies based solely on SAS and we only included babies who scored 3 and above. A similar study conducted by Gamhewage NC, *et al*[1] in another tertiary care centre has reported the incidence as 8.2% where the inclusion criteria have been the above-mentioned signs. We decided to assess the severity and enrolled based on SAS. This could be the reason for the lower incidence of respiratory distress.

2. The increase in RDS is most probably due to higher caesarean section rate which was around 50%. (2021-50%, 2022-51%)

3. We certainly agree with Dr. Lakra's point on hypoxic ischaemic encephalopathy (HIE). In this study as we mentioned above, the inclusion criteria were based on SAS of 3 or more, hence babies with mild respiratory distress (SAS 0-3) were not included. There were babies with a score of around 2 who had birth asphyxia during this period.

4. We do not agree with this statement as we have clearly mentioned the association only with 3 or more vaginal examinations (p=0.008) and PPROM (p=0.044). We have not mentioned the association between maternal pyrexia and foul-smelling liquor. However, we do agree with not mentioning the association between maternal diabetes and RDS, which should have been elaborated upon, as Dr. Lakra has pointed out.

References

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