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Correlation of Point-of-Care Lung Ultrasound Scoring System with Clinical Score and Chest X-ray Score for Newborns with Respiratory Distress

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Abstract

Objectives

To determine correlation between the lung ultrasound score with the chest X-ray score and the Downes score in neonates with respiratory distress.

Methods

All consecutive neonates admitted in the neonatal intensive care unit (NICU) with respiratory distress were checked for eligibility at admission. Clinical scoring was done using Downes score immediately. 12 area lung ultrasound scoring was done using Brat Score by trained experts. Chest X-ray scoring was done from high quality anteroposterior

images. The findings of the three scores were then compared and correlated using Pearson correlation coefficient.

Results

One hundred neonates were enrolled with mean gestational age of 34.8 ± 3.6 wk and mean birth weight of 2063.7 ± 722 g. A positive correlation was found between Downes score and lung ultrasound score (Pearson correlation coefficient 0.712, p -value < 0.001) but not between lung ultrasound score and chest X-ray score. In the subgroup analysis, a statistically significant correlation was found between lung ultrasound score and Downes score for babies > 32 wk gestation but not for those < 32 wk gestation.

Conclusions

In neonates admitted to NICU with respiratory distress, lung ultrasound score correlates well with Downes score, especially in babies with gestational age > 32 wk.

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Contributions

GG conceived the study plan and supervised the whole process. BS, CC, SP and VMJ were involved in data collection. BS, CC, SP and SM were involved in analysis and interpretation of results. CC and SM were involved in draft manuscript preparation. All the authors read and approved the final manuscript. SP will act as guarantor for this manuscript.

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Ethics declarations

Conflict of Interest

None.

Additional information

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