Second, outcome as well as complications of CPAP will also depend on flow rate and peak end expiratory pressure (PEEP). Authors have not mentioned about flow rate and PEEP in their study [4].

Third, authors have used Silverman-Andersen score – that is primarily used to assess respiratory distress in premature baby – and Modified Pediatric Society of New Zealand Severity Score. These scores have not been validated as an outcome measure in infant with bronchiolitis [5].

Finally, the information about weight, length and Z-scores are missing, which are important baseline characteristics. In table II, the value of standard deviation are greater than the mean value. It will be better if these data would have been presented as median and interquartile range.

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Nasal Continuous Positive Airway Pressure for Bronchiolitis

In the January 2018 issue of *Indian Pediatrics*, Lal, *et al*. [1] reported that nasal continuous positive airway pressure (nCPAP) helped to reduce respiratory distress significantly compared to standard care in infants. We have certain queries and comments:

Bronchiolitis is a dynamic disease which requires frequent monitoring and management accordingly [2]. So, why did the author choose to see the effect of CPAP on children with bronchiolitis for initial first hour only? Improvement in first hour of admission does not prove the long-term efficacy of the modality. As bronchiolitis has become a major cause of morbidity and bed occupancy in our setting, it would have been very informative had they reported on the effect of CPAP on treatment outcomes like requirement of mechanical ventilation and duration of hospital stay.

Authors have used two scoring systems, Silverman-Anderson Score and Modified Pediatric Society of New Zealand Severity Score, for assessing their secondary outcome. Silverman-Anderson scoring system is mainly used for monitoring respiratory distress in preterm neonates [3]. Though they have used an intention-to-treat analysis, changes in respiratory rate have been compared only in those children who completed the study. The pressures and the type of interface used for the CPAP has not been mentioned. All of these above-mentioned factors make the generalizability of the study doubtful in our set up.

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AUTHORS' REPLY

Using CPAP for Bronchiolitis

The main point of criticism of our study [1] by all these readers is that we assessed only for benefits over the first hour of admission. This is a valid point. The reason for such protocol was the ethical issue. Theoretically, it was not logical to use CPAP (that increases dead space [2]) to treat a condition like bronchiolitis, which is characterized by air trapping [3]. This is why we decided to study this modality for the first hour, while we closely monitored the child, ready to switch to more conventional modalities if the baby's distress increased. Most babies did well on CPAP, and this was continued after the 1-hour study period, but the protocol was to study distress (improvement or

deterioration) in the first hour. From this study over the first hour, we were able to identify patients who improved with CPAP. We know from our observation during the period that infants who improved in the first hour were continued on CPAP and maintained the benefits. However, we did not collect study data beyond the first hour. Respiratory rate is variable but a reduction in respiratory rate is usually a good sign of improvement.

Regarding inter-observer variability in counting the respiratory rate, the counting of respiratory rate is a simple procedure and we did not consider inter-observer variability to be significant although we did not test for this. We do not consider video recording would have been useful.

PEEP and flow rates are crucial factors in bubble CPAP. We used flow rates between 6 L/min and 10 L/min, and PEEP of 6 cm of water to 8 cm of water depending on the baby's size and flow rates that were comfortable for the baby.

The median and IQR values (Bubble CPAP *vs* Standard care) in our study were as follows: Respiratory rate (8 (3.5, 12) *vs* 5 (2.3, 7.8); *P*=0.018), SA Score (1 (0, 1) *vs* 0 (0, 1); *P*=0.29) and MPSNZ-SS (2 (1, 3) *vs.* 1 (0, 2); *P*=0.012).

Regarding our use of Silverman-Andersen score and Modified Pediatric Society of New Zealand Severity Score to assess respiratory distress in bronchiolitis, they have been widely used to evaluate distress in infants.

We acknowledge we could have recorded anthropometric data for comparison between cases and controls in this randomized trial to demonstrate comparability between the groups, but this was not a part of the study protocol.

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Association *vs* Agreement: The Mystery Continues…

We read with interest the article by Pendse, *et al*. [1] regarding role of transcutaneous bilirubin measurement in preterm neonates. The study is yet another attempt to validate new era of sensor-based technology that is quick and non-invasive. However, we have few concerns:

1. The authors used a statement: "Bland-Altman analysis was used to 'visualize' the agreement between TSB and TCB." It appears that the authors have confused Association with Agreement. Correlation/regression or analysis of variance (t-test) are measures of association and not of agreement. An excellent association does not necessarily mean good agreement. Bland and Altman developed a simple statistical tool to measure agreement between two methods way back in 1986 [2]. However, the tool is often used inappropriately [3].

2. Authors also highlighted that 90% of the data points fall within 95% confidence interval. This is a statistical fact, and we cannot claim anything about agreement from this. As it is a kind of estimation problem, a larger sample size is advisable. Bland himself suggested minimum of 100 observations with justification [4]. A complicated regression analysis or a tool based on Structural Equation Modeling (SEM) [5] may be used to analyze method comparison studies but Bland-Altman method is popular due to its simplicity and ease of interpretation. The authors could have tested the reliability along with validity as they have three transcutaneous bilirubin observations.

We suggest the authors to continue the study with large sample (at least 100) and present the findings again with Bland-Altman analysis as primary (and only) analysis and interpretation based on the new findings.

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