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AUTHORS' REPLY

We thank the readers for highlighting few important points related to our study on comparison of transcutaneous bilirubin measurement with total serum bilirubin levels in preterm neonates receiving phototherapy [1]. We completely agree that visual inspection of jaundice in preterm infants is fraught with problems, and may be unreliable. But in developing countries with plenty of preterm neonates in the NICUs, it can serve as a valid screening tool and help triage the neonates which need to be tested for jaundice earlier in comparison to others. We screened eligible neonates for jaundice and tested them if their visual assessment as per Kramer's scale [2] was above the cut-off for that particular gestation [3]. In addition, we used a stool colour chart [4], to exclude conjugated jaundice. We did not perform additional investigations for the purpose of the study, but in circumstances like Rh-negative mother, we definitely performed the required investigations as per our unit policy.

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Neonatal Endocrine Labomas: Few Concerns

We read the article by Chittawar, *et al*. [1], and would like to appreciate the authors for highlighting the important but under-recognized pitfalls in sampling and interpretation of endocrinology reports of neonates. However, there are certain points we would like to highlight, which might bring more clarity in interpreting endocrine values in neonates.

1. The total calcium values are slightly lower in neonates; however, ionized calcium values are comparable to older children and adults [2]. The low total calcium values are due to low serum protein levels. Therefore, correction formulas/nomograms to convert total calcium into ionized calcium may not be valid in neonates.
2. Authors stated that the cut-off for the diagnosis of hypoglycemia is ≤45 mg/dL in first 24 hours. There is no mention whether it is blood glucose or plasma glucose. As per recent recommendations of Pediatric Endocrine Society, during first 48 hours of life, plasma glucose target should be >50 mg/dL, and after 48 hours it should be 60 mg/dL [3].
3. With increasing survival, evaluation of extreme preterm babies with maternal hypothyroidism is an upcoming challenge. There is very less normative data in extreme preterm neonates. Currently most commonly used absolute cut-offs for hypothyroidism are T4 <6.5 ug/dL and TSH >20 mU/L. However, as per the available data in this population (23-27 weeks), the normal TSH value is 0.2-30.3 mU/L and normal mean T4 is as low as 4 ug/dL [4]. Therefore, before labeling as hypothyroidism and starting therapy, one must see gestation and postnatal age-specific nomograms.
4. Level of growth hormone, IGF-I, and IGFBP-3 at birth are significantly different in intrauterine growth restricted (IUGR) babies compared to appropriate for gestation age (AGA) babies [5]. As per WHO 2013 report, 47% of babies in India are small for gestational age (SGA), and out of which about 10% will remain short and need evaluation. Also, these are

the babies who will have persistent hypoglycemia, and as a part of the evaluation will undergo growth hormone testing. Therefore, one must use IUGR-specific values while interpreting growth hormone values.

Last but not the least, while interpreting values, due attention must be given to units of the reported values and appropriate conversion factor should be used wherever required to avoid analytical errors.

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AUTHOR'S REPLY

We appreciate the comments of the reader and agree that the need of the hour is to also highlight common analytical and non-analytical pitfalls in other streams of medicine apart from endocrinology – for example, hematology, biochemistry and immunology – to avoid "Labomas" in those areas [1]. Such data are unfortunately lacking from India. The authors are currently working on this area, and should soon be able to come out with concrete Indian data on the same.

Global laboratory data analysis in the West have revealed that a large majority of the laboratory errors (75% of the errors) involved wrong patient labeling, with a large fraction of this error (24% of the errors) occurred at the site of sample collection and labeling [2]. Labomas have consistently been reported to be predominantly due to pre- and post-analytical stages errors, rather than the analytical errors [3]. A study evaluating data obtained from 1,600 testing procedure in general biochemistry and hematology revealed 0.87% procedures being associated with errors, with preanalytic and post- analytic errors contributing to 35.7% and 50% of all errors [4]. The good news is that studies have consistently reported that less than 10% of all labomas to actually have an impact on patient diagnosis and management [3,4]. Increased automation, with better analytical technology have helped in reducing the occurrence of labomas.

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