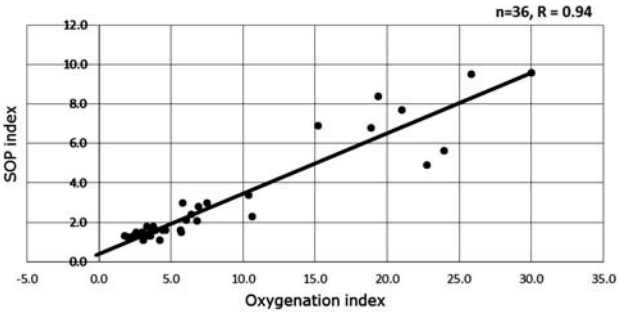

FIG. 1 *Linear correlation between SOP index and Oxygenation index.*

SOPI is calculated with PEEP. This makes it possible to use SOP index in babies who are on CPAP or NIPPV, where only PEEP is reliable. Lung injury assessment with PaO_2:FiO_2 [3] and Oxygenation index, which has been successfully used in neonates [4], can only be measured by an arterial puncture or indwelling catheter.

SOP index has very good correlation with oxygen index. SOPI of <2, 2 to 3.7 and greater than 3.7 indicates pulmonary disease with high sensitivity and specificity. SOP index has potential to be used for assessment of the severity of acute pulmonary disease in babies on CPAP and NIPPV.

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Contributors: SMD: conceived and designed the study. He analysed the data and prepared the manuscript; and will act as the guarantor. AAC: study design and collection of the data. He has revised and approved the manuscript. PM: helped in designing the study and data analysis. He has revised the manuscript and approved for submission.
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Cord Blood Vitamin D Levels of Term Neonates

We estimated cord blood 25-hydroxy vitamin D levels of 50 term healthy neonates born in a tertiary care center of Kozhikode, Kerala, India. Vitamin D levels were normally distributed with a mean (SD) value of 11.36 (4.75) ng/mL and median (range) values of 10.85 (3.9-24.9) ng/mL. Majority of babies had values between 5 to 15 ng/mL. This study shows that even in tropical climates most of our neonates are born with deficient vitamin D levels.

Keywords: *25 hydroxy vitamin D, neonate, rickets.*

A routine supplementation of vitamin D in neonates is being increasingly endorsed by various international organizations [1]. We conducted this study to determine the cord blood 25-hydroxy vitamin D levels of term healthy neonates born in Malabar Institute of Medical sciences, Kozhikode, Kerala during the summer months of March and April 2013.

Fifty neonates, born at term, whose mothers (mean age 28 yrs) were on antenatal follow up from this institution enrolled for the study. They had received a daily supplementation of 1000 mg calcium and 200 IU vitamin D from 12 weeks of gestation onwards. We excluded neonates with asphyxia, those needing admission to intensive care unit, and those with congenital anomalies. Cord venous blood (5 mL) was collected immediately and 25-hydroxy vitamin D levels were analyzed by Chemiluminescent micro particle immunoassay using DiaSorin liaison equipment. Maternal data were collected using electronic medical records and a questionnaire. Birth weight, sex and mode of delivery were recorded at the time of sample collection. All babies were supplemented with vitamin D at discharge. Prior informed consent was obtained from the parents and clearance was obtained from Institute ethical committee. Statistical analysis was

performed with the SPSS version 16.0; *P* value less than 0.05 was considered statistically significant.

We enrolled 50 neonates (22 males) with mean birth weight of 2870 g. Vitamin D levels were normally distributed with a mean (SD) value of 11.36 (4.75) ng/mL, and median (range) value of 10.85 (3.9-24.9) ng/mL. As per US Endocrine Society classification [1], 47 (94%) had vitamin D deficiency (<20 ng/mL). The remaining three had vitamin D insufficiency (21-29 ng/mL). Significantly higher cord vitamin D level were seen in primiparous mothers, and mothers with gestational diabetes (***Table* I**).

Neonates in this study had a lower mean value of cord blood 25-hydroxy vitamin D levels than that has been reported in other studies [2,3]. Maternal level is the single most important factor that influences neonatal vitamin D levels [4-6], especially the third trimester levels [5,6]. We did not measure 25-hydroxy vitamin D levels in mothers, and this was a limitation. Other limitations were small sample size and lack of follow-up.

This study shows that even in a tropical climate, neonates suffer from vitamin D deficiency. We recommend larger studies in different settings with follow-up of neonates found to be vitamin D deficient.

TABLE I COMPARISON OF CORD BLOOD 25-HYDROXY VITAMIN D LEVELS IN DIFFERENT GROUPS

Variables	*n*	*Mean cord vitamin D (ng/mL)*
Male	22	8.4
Female	28	11.8
AGA	39	11.2
SGA	11	10.5
Caesarian delivery	40	11.4
Vaginal delivery	10	8.35
Primiparous mother	17	12.8*
Multiparous mother	33	8.4
PIH	6	10.2
No PIH	44	10.9
GDM	6	15.0*
No GDM	44	9.9
Singleton	44	11.8
Twin	6	8.4
#*Pardha*	23	10.5
No pardha	27	12.3

AGA – Apppropriate for gestational age; SGA – Small for gestational age; GDM – Gestational diabetes mellitus; P<0.05; #Use of veil.

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