

their clients, information which may not reach the prescribing doctors. We would like to mention that up to 68 countries have already authorized pharmacists to report AEs and this has led to a substantial improvement of the international adverse drug reactions reporting system(4).

We fully endorse Dr. R.N. Srivastava's suggestion that the Clinical Pharmacology Cell of the Indian Academy of Pediatrics should liaison with the National Pharmacovigilance Program to improve the current unsatisfactory state of pediatric pharmaco-vigilance in our country. We reiterate our earlier demand that an expert pediatrician nominated by the Indian Academy of Pediatrics should be a member of the National Pharmacovigilance Advisory Committee. This would help in fostering the much-needed collaboration between the Indian Academy of Pediatrics and the National Pharmacovigilance Program and eventually improve awareness about the national program amongst its 16,000 members. Only collaborative efforts will ensure that a significant number of AEs get reported. This will lead to early identification of rare and life-threatening adverse drug reactions and help ensure that children in our country receive safe drugs.

Lastly, we wish to inform Dr. R.N. Srivastava and readers that detailed informa-

tion about the national program, viz., the AE reporting form, the protocol, list of centers, members of the National Pharmacovigilance Advisory Committee, etc. is available at the Central Drugs Standard Control Organization (CDSCO) website: <http://cdsco.nic.in/html/pharmaco.html>

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Onset of Jaundice in G-6-PD Deficient Neonates

We read the letter by Drs. Murki and Dutta, in which they report on umbilical cord blood serum total bilirubin (STB)

levels in glucose-6-phosphate dehydrogenase (G-6-PD)-deficient and-normal neonates, with great interest(1). In their study, cord blood bilirubin levels were similar in the G-6-PD deficient and control neonates, suggesting that, in the Indian neonates studied, G-6-PD deficiency associated

neonatal jaundice did not commence in utero. The authors conclude that their data negates that of a previous study of ours that jaundice in G-6-PD deficient infants commences most likely *in utero*(2).

We would like to point out significant differences in concept, design and conclusions between our study and the present one which renders them not directly comparable. Because of technical and logistic problems, we could not study umbilical cord blood samples as did Drs. Murki and Dutta. Umbilical blood sampling would undoubtedly have been a more accurate method of reflecting the in utero status. Instead, we sampled neonates within 3 hours of delivery. Accordingly, we stated our objective as determining whether the onset of jaundice was in the perinatal period, either in utero or in the immediate post-natal period. We believed that our methodology was reflective of the in utero status, but we could not, and did not, categorically state so. We found that in blood sampled within three hours of delivery, STB concentrations were significantly higher in G-6-PD deficient neonates than in controls (2.9 ± 0.7 mg/dL vs. 2.6 ± 0.6 mg/dL, $P = 0.003$). In the G-6-PD deficient group, significantly more neonates with an early STB value \geq mean developed subsequent hyperbilirubinemia. than those with STB values $<$ mean. Despite the larger number of control neonates, similar analysis in that group did not reach statistical significance.

Many reasons may plausibly explain these differences in findings. One possibility is that our study was performed on Sephardic Jewish neonates with the G-6-PD Mediterranean mutation, while different mutations in the Indian population may have been responsible, in part, for differences between the population groups.

Diverse environmental factors, possibly

interacting with varying genetic factors, may also have had an effect on the bilirubin levels.

We stand by our conclusions that G-6-PD deficiency associated neonatal hyper-bilirubinemia, in the population we studied, commences in the immediate perinatal period. Others(3-6) have also demonstrated higher umbilical cord blood or first day STB concentrations in G-6-PD deficient neonates. The fact that Drs. Murki and Dutta obtained different results is interesting and worthy of further study. However, we do not concur that their results negate those of our study or our conclusions; rather, they add interest to the subject and should stimulate further studies of this nature.

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Jaundice in G-6-PD Deficient Neonates (Reply)

Dr. Kaplan has raised some objections to our letter published in *Indian Pediatrics*(1). Referring to his own study(2), he states: "..... We stand by our conclusions that G-6-PD deficiency associated neonatal hyperbilirubinemia, in the population we studied, commences in the immediate perinatal period". Dr. Kaplan takes great pains to explain that in his study he had not implied that bilirubin rise in G-6-PD deficient neonates starts in utero, but rather in the "perinatal period". Referring to our letter, he says: "The authors (*i.e.*, Drs. Murki and Dutta) conclude that their data negates that of a previous study of ours that jaundice in G-6-PD deficient infants commences most likely *in utero*".

We would like to clarify certain facts by quoting verbatim from the relevant articles. In the discussion section of his own article(2), Dr. Kaplan stated "Although umbilical cord blood sampling undoubtedly would have offered a more accurate representation of the in utero status, for logistical reasons and

because of difficulties in coordinating the study with the delivery room staff, we chose to obtain samples from the infants within 3 hours of delivery to reflect the in utero situation. Although we cannot exclude categorically a very early postnatal onset of the bilirubinemia, we are confident that this method of sampling reliably reflected the in utero state". Later in the same article he writes: "In the current study, already immediately after birth, most likely reflecting the in utero status, the G-6-PD-deficient neonates had significantly higher serum bilirubin values than control participants."

All that Dr. Murki and I did in our study was to examine the cord blood bilirubin among G6PD deficient babies, something which Dr. Kaplan himself admits is a more accurate representation of the in utero state. Having found no difference between G-6-PD deficient babies and normal controls, we concluded: "Our study negates the possibility raised by Kaplan et al that in G-6-PD deficient neonates jaundice commences most likely in utero."(1) We had, by no means, negated Dr. Kaplan's study as a whole. We had restricted ourselves to negating the possibility of in utero rise of bilirubin, which Dr. Kaplan had raised in his article. We have no contest with anything else that Dr. Kaplan has concluded. We fully agree that mutational differences between Sephardic Jews and Indians may account for some of the differences between his study and ours.

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