

## Urinary tract infection and neonatal hyperbilirubinemia

To the Editor,

I have read with great interest the article by Bilgen et al., which appeared in the last issue [2006; 48 (1)] of the journal. The relationship (reason or result) between neonatal, especially prolonged hyperbilirubinemia and urinary tract infection is highly questionable, and investigation and debate on the topic are ongoing<sup>1,2</sup>. However, there are some methodological and propositional question marks in the authors' study, which should be noted and highlighted. The authors aimed to investigate the incidence of urinary tract infection (UTI) in newborns with asymptomatic and unexplained indirect hyperbilirubinemia in the first two weeks of life. However, although the cases included in the study were stratified according to "hyperbilirubinemia" (inclusion criterion), grouping (main outcome measuring; Groups 1 and 2) was made on the basis of urine culture positivity. Thus, in the methodological design of the study in the conclusion, cases with and without urine culture positivity were compared with respect to various parameters, including early and late hyperbilirubinemia, instead of comparing newborns with and without hyperbilirubinemia on the basis of whether they have or do not have a UTI.

On reading the article, it also raised the question about how many newborns were enrolled initially and excluded later in the study, and most importantly, which levels of daily serum (capillary or venous?) bilirubin measurements were used for defining newborns with hyperbilirubinemia in (a wide range of) the first two weeks of life. Another interesting finding in the study is gender, with 62% of the hyperbilirubinemic newborns being male, while there was no significant difference between the newborns with and without UTI with respect to gender; this requires scientific explanation since we are not very familiar with such a gender predominance in neonatal hyperbilirubinemia and since at least a mild predominance of female gender is expected in even neonatal UTIs<sup>3,4</sup>.

In light of the results of the present study, it is also difficult to propose that UTI can occur in asymptomatic, jaundiced infants even in the first week of life ("as a cause of early hyperbilirubinemia") considering the age range of the cases (3-13 days) without making a comparison between the early- and late (prolonged)-jaundiced newborns.

### REFERENCES

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Dear Dr. Sarıcı,

The aim of our study was to investigate the importance of urinary tract infection (UTI) in jaundiced infants within the first two weeks of life with an unexplained etiology. It is well known that UTIs play an important role in prolonged jaundice, which is described as hyperbilirubinemia lasting longer than two weeks in term babies<sup>1</sup>. Our study group was not composed of babies with prolonged jaundice. Dr. Sarıcı stated that there were some methodological question marks in the study as that grouping was made according to urine culture positivity in babies with unexplained indirect hyperbilirubinemia. In our study group, all the cultures were taken by catheter as is recommended in the literature, so it would not be ethical to obtain urine cultures from healthy babies as a control group. While the results of our study group showed that the incidence of UTI (8%) was higher when compared to the incidence reported for the newborn period (0.1-0.4%) in the literature this difference could not be accepted as coincidental<sup>2</sup>. For ethical reasons and because of the significant difference between our study group and the incidence reported from newborn babies in the literature, we did not aim to compare our study group with babies without hyperbilirubinemia.

Babies with a bilirubin level higher than 15 mg/dl and at or above the high intermediate risk zone according to the Bhutani nomogram were included in the study<sup>3</sup>. All blood samples were obtained initially by capillary method, and a bilirubin measurement that was higher than 15 mg/dl was also confirmed by a venous sample. Babies jaundiced in the first 24 hour and having any signs of hemolysis and babies with signs of sepsis were excluded. During the study period, 134 infants were detected as having bilirubin levels higher than 15 mg/dl and 32 of the babies were excluded from the study because of signs of sepsis (n:8) and hemolysis (blood group incompatibility n:15, glucose-6-phosphate dehydrogenase deficiency n:2, deficient data n:7).

The explanation for "male gender predominance" observed in our study is not surprising. Our study showed that male gender was more common among babies with hyperbilirubinemia. It has been reported that bilirubin levels in low birth weight infants were significantly higher in males compared to females<sup>4</sup>. The "Subcommittee on Hyperbilirubinemia" also reported male gender to be a risk factor for hyperbilirubinemia<sup>5</sup>. So our results were similar with the findings reported from the literature. The higher UTI incidence observed among male babies with UTI is also comparable with the literature<sup>2</sup>.

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