

tivity, 97.6% specificity and a positive predictive value of 25% for the detection of hemolysis in neonates.<sup>3</sup>

In addition to having very low predictive ability, the DAT is costly when used as a screening test. US studies of the costs of evaluating neonatal jaundice have reported the cost per test to be US\$17-\$47.<sup>2,5,6</sup>

Newman and colleagues concluded that the investigation of hyperbilirubinemia should be individualized, with more aggressive investigation of infants with early onset or severe hyperbilirubinemia.<sup>6</sup> Holtzman has also stressed the need for critical appraisal of strategies intended to identify infants with hyperbilirubinemia.<sup>7</sup>

In Calgary, routine DAT testing is being phased out in favour of a comprehensive hospital- and community-based transcutaneous bilirubinometry program. We believe that it provides a convenient, rapid, painless, cost-effective and accurate screening assessment for hyperbilirubinemia in the term and near-term neonate, particularly when incorporated into routine well-baby visits by public health nurses.<sup>8</sup>

We believe that the DAT should be reserved for diagnostic purposes in children with early or clinically significant hyperbilirubinemia.

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#### [The authors respond:]

We thank Stephen Wainer and colleagues for their comments on our recent article.<sup>1</sup> We agree that using any test in isolation, including the Coombs' test, is not the most effective way to identify infants at risk of neonatal hyperbilirubinemia. Our recommendation for Coombs' testing was not for all infants whose mothers had type O+ blood, only for those who had risk factors for hyperbilirubinemia or were already jaundiced at the time of discharge.

Despite existing guidelines from the American Academy of Pediatrics<sup>2</sup> and the Canadian Paediatric Society<sup>3</sup> recommending identification of newborns at risk and close follow-up of these infants, our data clearly demonstrate that

severe neonatal hyperbilirubinemia continues to occur at an alarming rate in Canada. The most common cause in our population was ABO incompatibility; this needs to be emphasized to pediatricians and primary health care practitioners.

Many strategies have been postulated as being cost-effective in preventing severe neonatal hyperbilirubinemia. We welcome the use of strategies coupling clinical suspicion of risk of hyperbilirubinemia at the time of discharge with close outpatient monitoring. Transcutaneous bilirubinometers, although very useful within a clinical context, may not always serve as a substitute for a serum bilirubin measurement when the bilirubin concentration reaches levels at which phototherapy is required.<sup>4,5</sup> No reported strategies using transcutaneous bilirubinometers have yet been proven to be cost-effective,<sup>6</sup> largely because the prevalence of long-term neurological sequelae of severe hyperbilirubinemia is not yet known.

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In their commentary<sup>1</sup> on our recent article,<sup>2</sup> Jeffrey Maisels and Thomas

**Table 1:** Use of the direct antibody test to predict the development of hyperbilirubinemia in newborns

Study	PPV (%)	NPV (%)	Sensitivity	Specificity
Meberg and Johansen <sup>2</sup>	12	96	64	65
Herschel et al <sup>3*</sup>	53	89	15	98
Dinesh <sup>4†</sup>	23	92	15	95

Note: PPV = positive predictive value, NPV = negative predictive value.

\*Results for infants born to nonsmoking mothers.

†Calculated results from data based on need for phototherapy.

Newman accurately pointed out some difficulties in interpreting our data. There is no doubt that data collected through surveillance programs can be incomplete because of the nature of these programs, and this can lead to an underestimation of the number of cases and can limit our ability to thoroughly analyze the factors underlying the findings. Despite this limitation, our study has shown that severe hyperbilirubinemia continues to occur in Canada. The majority of the infants with severe hyperbilirubinemia in our study were readmitted shortly after leaving the hospital, raising the concern that health care providers are missing an opportunity to prevent this condition. Although recommendations from the American Academy of Pediatrics<sup>3</sup> were recently published, they are currently not being followed or are impractical to apply to newborns.

Given the possibility that introducing routine screening (serum bilirubin measurements, blood group typing and Coombs' testing) may have financial implications such as longer hospital stays for newborns, it is important to understand the burden of illness of severe hyperbilirubinemia and its complications in Canada, namely bilirubin-induced neurological dysfunction and kernicterus. Newman and Maisels referenced a Danish case-based report<sup>4</sup> that estimated the incidence of kernicterus at 1 in 50 000 to 1 in 60 000 live births. It is important to note that this was by no means a systematic review of the Danish population. In our study, half of the infants with severe hyperbilirubinemia were born to non-white mothers.<sup>2</sup> Ethnicity may be a contributing factor to severe hyperbilirubinemia, secondary to a higher incidence of glucose-6-phosphate dehydrogenase deficiency in non-white populations and a delay in recognition of jaundice owing to the babies' darker pigmentation.

We believe that careful assessment of newborns at the time of discharge and consideration of blood group incompatibility and risk of glucose-6-

phosphate dehydrogenase deficiency with appropriate follow-up could reduce the incidence of neonatal hyperbilirubinemia and readmission to hospital. A more accurate estimate of the incidence of kernicterus is of paramount importance in order to justify cord blood testing and the measurement of serum bilirubin at the time an infant is discharged from hospital.

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#### Corrections

In the meta-analysis of  $\beta$ -blockers for the treatment of hypertension by Nadia Khan and Finlay McAlister,<sup>1</sup> there were typographic errors in the numbers reported on the right-hand side of Figs.

2A and 2B. None of the typographic errors were incorporated in the analyses, and thus there was no effect on the findings or interpretation of the findings. The corrections are summarized here.

Fig. 2A: For the Medical Research Council trial, the denominator for "other drug" should read 4297 (instead of 8654). The overall denominator was 14 708 for the  $\beta$ -blocker group and 14 638 for the "other drug" group.

Fig. 2B: The overall denominator was 42 598 for the  $\beta$ -blocker group and 44 582 for the "other drug" group. The *p* value for heterogeneity should be 0.08, not 0.8. The pooled summary estimate was 1.07 (95% CI 1.00–1.14).

#### REFERENCE

1. Khan N, McAlister FA. Re-examining the efficacy of  $\beta$ -blockers for the treatment of hypertension: a meta-analysis. *CMAJ* 2006;174(12):1737-42.

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A recent News article<sup>1</sup> concerning the amount of money Canada spends on foreign aid contained some typographical errors. In fact, Canada spent \$2.719 billion on international aid in 2003/04. This was raised to \$3.237 billion in 2005. In 2005/06, the federal government spent \$3.637 billion. We apologize for any inconvenience this error may have caused.

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1. Kondro W. International aid doldrums. *CMAJ* 2007;176(1):26.

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