UNIVERSAL PRE-DISCHARGE TRANSCUTANEOUS BILIRUBIN SCREENING OF TERM AND LATE PRETERM INFANTS

Approved by:

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Next Review: August, 2018

BACKGROUND

Severe hyperbilirubinemia (> 425 µmol/L or requiring exchange transfusion) occurs in Canada in approximately 4 per 10,000 live births. Some of these cases may develop bilirubin encephalopathy or Kernicterus, a very serious consequence. In the current era of early discharge from hospital of the healthy newborn infant, attention is being focused on the prediction of those infants at greater risk for developing severe hyperbilirubinemia. Those high-risk infants will be monitored closely in the community following discharge.

Bilirubin measurement, either serum or transcutaneous, in the first 72 hours of life when plotted against the infant’s age in hours, has been shown to be useful in predicting the risk of subsequent high levels of bilirubin. The Fetus and Newborn Committee, Canadian Pediatric Society (CPS) 2011, recommends bilirubin screening in this population in the first 72 hours of life.

- All term (> 37 weeks gestation) and late preterm (34–36 weeks gestation) infants will be screened for hyperbilirubinemia risk using a jaundice meter prior to discharge from hospital or at 72 hours of age; whichever is sooner.

- The jaundice meter reading will be plotted on the prediction of risk (Bhutani) nomogram (Appendix A).

- Decision for further screening or treatment will be made based on the “Universal Transcutaneous Bilirubin Screening” algorithm. (Appendix B)

- Calibration of the jaundice meter will be completed as per manufacturer’s recommendations and documented daily.

EQUIPMENT/SUPPLIES REQUIRED

- Jaundice Meter with charger unit
- Alcohol wipes
**PROCEDURE**

<table>
<thead>
<tr>
<th>ACTION</th>
<th>RATIONALE</th>
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<tbody>
<tr>
<td>1. Ensure the jaundice meter has been calibrated as per manufacturer’s recommendation.</td>
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<tr>
<td>2. Remove the jaundice meter from the charger unit.</td>
<td>Prevent the spread of infection.</td>
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<td>3. Clean the measuring probe on the meter with alcohol wipe.</td>
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<td>4. Set the power switch to “ON” position. N-3 should appear on the screen.</td>
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<td>5. Check that the “Ready” lamp is illuminated.</td>
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<td>6. Place the measuring probe perpendicular to the infant’s mid-sternum, avoiding any bruised or discoloured areas.</td>
<td>Bruised/discolored areas can give false readings.</td>
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<td>7. Push the measuring probe gently until a click sounds. The number of remaining measurements will display.</td>
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<td>8. Lift the probe from the patient, wait for the ready light and reapply for a total of three measurements.</td>
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<td>9. When the remaining number of measurements is completed, the average of the measured values appears on the display.</td>
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<tr>
<td>10. If the measured value is above 340 µmol/L, the display shows “---“. A serum bilirubin should be measured at this point.</td>
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<td>11. Record the meter reading on nursing document. If this is the last reading prior to discharge from hospital, record this reading, as well as date and time of reading, on the Provincial Notice of Birth (PNOB) form under “JMI”.</td>
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<td>12. Follow “Universal Transcutaneous Bilirubin Screening” algorithm for further treatment decisions (see Appendix A and B).</td>
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13. Do not use the jaundice meter if the baby is receiving phototherapy or has received an exchange transfusion.

14. Do not use the jaundice meter for 24 hours after phototherapy has been discontinued.

15. Record date and time phototherapy was discontinued (if applicable) on PNOB form.

RELATED POLICIES AND PROCEDURES

REFERENCES


Canadian Pediatric Society. Fetus and newborn committee. Guidelines for detection, management, and prevention of hyperbilirubinemia in term and late preterm newborn infants (35 weeks’ gestation or more). *Paediatrics and Child Health* reaffirmed 2011;12 suppl B:1B-24B.


Revisions: August 2015
APPENDIX A

BILIRUBIN RISK NOMOGRAM 34-42+ weeks

Nomogram for designation of risk in term and late-preterm newborns based on hour-specific bilirubin values

Pediatrics 2004;114:297-316
APPENDIX B

UNIVERSAL TRANSCUTANEOUS BILIRUBIN SCREENING:
All Babies Prior to Discharge

TcB in Hospital before discharge
OR
before 72 hours, whichever is sooner

Nomogram, risk zone

Check DAT if Mom
Rh Negative or Type O

Risk Zones
High = H
High-intermediate = HI
Low-intermediate = LI
Low = L

DAT negative or unknown
AND
> 37\(^{0/7}\) weeks

HI
LI
L

DAT positive
OR
< 38 weeks

LI
H
L

Notify MD
Consider:
- repeating TcB in 4-6 hrs
- further testing
- phototherapy

Routine Care
(discharge)

DAT positive
AND
< 38 weeks

L
HI
LI
H

Notify MD

Phototherapy
Further testing
SIGNATURES

Original signed September, 2015

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