Ensuring safe neonatal care for newborn babies

Newborns should be examined on the second day after birth. Discharge should be individualised.

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In Norway, the routines regarding discharge of healthy newborns from the maternity ward vary; there is a need for national guidelines. The Norwegian Directorate of Health recently circulated draft guidelines for comments: *A new life and safe perinatal period for the family* (Norwegian text) (1). The deadline for responses was 29 November 20 2012. The American Academy of Pediatrics proposes that examination and discharge of healthy newborns can be individualised, depending on the physiological stability of the infant, the preparedness of the family and their ability to care for the newborn at home, assuming that they have access to social support, health services and other resources (2, 3). Decisions concerning the optimal time of discharge should be taken by the paediatrician.

Early discharge from the maternity ward is becoming more and more common, also in Norway, creating an extra source of unpredictability during a vulnerable period for families with newborns. One consequence of early discharge is that the paediatrician's examination must be scheduled on the first day of the infant's life.

What is the optimal time for examination of the newborn baby?

It has been difficult to design studies that reveal the effect of well performed neonatal examinations because the end-points are unclear. Jaundice, dehydration and feeding problems are the most common reasons for readmission of infants to hospital (4, 5).

To determine whether a single neonatal examination could be sufficient, a study at the maternity wards at Ulleval Hospital was performed in the late 1980s (6). At that time two routine examinations were undertaken, on the first and fourth days of life A number of insignificant murmurs were found on the first day of life because of persistent ductus arteriosus and tricuspid insufficiency (due to persistent foetal circulation with high pulmonary vascular resistance). However, some murmurs relating to important heart malformations were not detected. As a result the general rule was made to examine infants on the second day of life, but also to assess selected infants at risk on the first day.

Jaundice requiring treatment, some heart malformations, atrial and ventricular septum defects, gastrointestinal obstructions and other problems may require a longer observation period than one day to diagnose (7). By day three or four, maternal milk production is usually well established and bilirubin concentration has risen to a maximum (8). In the interests of a safe neonatal period for the infant it is therefore advisable for discharge not to take place until at least the second day. Conrad et al. have shown that a maternity stay of 24–36 hours is safe when outpatient follow-up is ensured (9). This could be done by having the infant come back for blood sampling for neonatal screening on about the third day of life.

What is best for the infant?

In our view, the length of the healthy newborn's hospital stay should be individualised on the basis of the unique characteristics and health of the mother and child, the mother's confidence and her ability to take care of the infant. The hospital stay should be long enough to enable early identification of problems. The neonatal examination must identify abnormalities and help the parents to take optimal care of the child.

Many cardiopulmonary problems associated with the transition from intrauterine to extrauterine life are most pronounced in the first 12–24 hours, whereas symptoms and signs of serious heart malformations may appear later (10). Early examination may lead to additional ultrasound examinations of the heart. Even after the introduction of pulsoximetry screening, some congenital heart defects remain undiagnosed immediately after birth, with studies reporting diverse frequencies (11–13). Early examination of the baby, i.e. before 48 hours, may fail to identify nutritional problems, jaundice or malformations of the gastrointestinal tract (14, 15). Milk production is not sufficiently established, and it is therefore difficult to assess breastfeeding and digestion.

Conclusion

In addition to the duration of hospital stay, attention should be devoted to other important factors that have implications for the health of mother and baby. Discharge from the maternity ward should take account of the medical, social and economic aspects of each individual case. Because of the physiological transition of the newborn, and the mother's need to learn to take care of her child, we recommend as a general rule that mother and child should not be discharged before 48 hours, with a longer stay after caesarean delivery. However, this must be determined individually. We recommend that infants discharged before 48 hours should be re-examined on the third day, when they return for newborn bloodspot screening.

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