In the UK and Republic of Ireland the responsibility for detecting significant postdischarge jaundice rests with the primary healthcare team of midwives, health visitors, general practitioners and informed parents. This survey throws up concerns that this early warning system is insufficiently robust. It may be necessary to consider the type of predictive testing being adopted in the USA. Bhutani *et al*³ recommend a universal predischarge total serum bilirubin measurement plotted on an hour-specific bilirubin nomogram to help customise the appropriate timing of follow-up appointments. It would be interesting to know how many of the 108 babies in this cohort would have been in the high risk >95th percentile zone on the nomogram, had such testing been done.

It is a woeful situation in the UK that there are no nationally agreed guidelines for the assessment and management of hyperbilirubinaemia in the newborn. A recent survey of more than 160 respondent UK neonatal units revealed a "massive variation in the choice of the threshold levels at which treatment was recommended" (J M Rennie personal communication, 2006). Equally, there is no agreement about whether treatment thresholds should take into account sickness (however defined), prematurity or the conjugated fraction of bilirubin.

Because bilirubin encephalopathy is comparatively rare, a degree of complacency towards treatment has evolved. Manning and colleagues have woken us up to a likely resurgence of kernicterus in our present day practice, and it is to be hoped that lessons will be learned from this important study. One lesson should be to call for a consensus agreement on UK treatment guidelines and to monitor the incidence of kernicterus through surveys such as this and a national registry of cases. Definitive randomised trials of jaundice management are unlikely to be conducted, and future refinement of treatment guidelines may evolve more readily from a well-observed experience base.

Arch Dis Child Fetal Neonatal Ed 2007;**92**:330–331.
doi: 10.1136/adc.2006.112342

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Competing interests: NKI receives medicolegal instructions in cases of litigation related to kernicterus.

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Sleeping positions of preterm infants

Placing preterm infants for sleep: first prone, then supine

Christian F Poets, Anette von Bodman

Perspective on the paper by Kassim *et al* (see page 347)

Supine sleeping is recommended to prevent the sudden infant death syndrome (SIDS). In preterm and/or low birthweight infants in particular, prone or side sleeping is associated with an increased risk of SIDS with an odds ratio of between 37 (side position) and 140 (prone position) compared with term infants sleeping on their back. This risk is multiplicative to the individual risks associated with either prematurity or the prone/side position.^{1 2}

These epidemiological data contrast with the fact that infants who are born prematurely exhibit less apnoea and intermittent hypoxia, have better thoraco-abdominal synchrony, higher lung volumes

and better oxygenation when nursed in the prone position, which is particularly true for those with chronic lung disease.^{3–11} Once the infants are nearing discharge, however, these physiological advantages of the prone position become less clear.¹² Nonetheless, these advantages, plus an unsubstantiated fear of a higher risk of aspiration in the supine position, may be responsible for many maternity hospitals in both the USA and Europe continuing to advocate a non-supine sleeping position for infants at the time of discharge.^{13 14}

The study by Kassim *et al* in this issue of the *Archives* adds to the wealth of pathophysiological studies on this issue. They measured lung volume and pulse

oximeter saturation repeatedly until discharge in a group of infants born at 24–31 weeks' gestation and found higher functional residual capacity (FRC) as well as significantly higher baseline oxygenation in those still requiring additional inspired oxygen, while placed prone.¹⁵

What conclusions can be drawn from these data? Using sophisticated equipment for pulmonary function testing and a pulse oximeter, Kassim *et al*¹⁵ confirm previous work suggesting that the prone position is associated with a higher lung volume and a better ventilation/perfusion matching.^{3 5} This is why these infants are nursed predominantly in the prone position in neonatal intensive care units (NICUs) throughout the world, and there is no reason to change this practice, particularly as SIDS is not an issue in these infants during their first few weeks of life in the NICU. However, soon after discharge SIDS becomes the leading cause of death, and then the benefits associated with a 1% increase in baseline oxygenation or a 10–15% increase in FRC have to be weighed against the dramatically increased risk of dying suddenly and unexpectedly. Because of this situation, and because the seeing-is-believing paradigm is also valid for parental behaviour

following discharge,¹⁶ it has become our practice to nurse all infants <32 weeks' gestation initially in the prone position, but to turn them over to the supine position approximately one week prior to discharge. At the same time, we explain to the parents that their baby has now largely outgrown the problems initially associated with their premature birth, and that we are now preparing everything for going home, where supine is the recommended sleeping position for their baby. This approach is similar to that adopted by many British NICUs according to a recent survey,¹⁷ and includes infants still receiving additional inspired oxygen at the time of hospital discharge.

Although admittedly unproved, we feel that this approach offers a solution to the cognitive dissonance otherwise resulting from parents seeing their baby being nursed in the prone position for several weeks while still in the hospital, but then being told that they must place their baby supine once at home. At the same time it allows us to take advantage of the physiological benefits of the prone sleeping position during the first weeks of life—which is now confirmed by Kassim *et al.*¹⁵

Arch Dis Child Fetal Neonatal Ed 2007;**92**:331–332.

doi: 10.1136/adc.2006.113720

Drug misuse during pregnancy

Drug misuse during pregnancy and fetal toxicity

Mark Anderson, Imti Choonara

Perspective on the paper by Garcia-Bournissen *et al* (see page 351)

The typical age at which women in North America and Europe misuse drugs encompasses their childbearing years. In the USA, according to the 2005 National Survey on Drug Use and Health, 3.9% of pregnant women admitted using illicit drugs in the previous month.¹ However, maternal self-report probably underestimates the problem to a marked extent. In a sample of over 3000 babies born to an obstetric population considered high risk for drug misuse, 44% tested positive for morphine, cocaine or cannabinoid by meconium immunoassay. In contrast, only 11% of the mothers admitted illicit drug use.² Methamphetamine is the most widely misused amphetamine with a rapid global increase in use throughout the 1990s.

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Competing interests: None.

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mothers across the USA, 5.2% were found to have used methamphetamine at some point during their pregnancy.⁴

The potential for adverse fetal effects as a result of maternal exposure to drugs and toxins is well recognised. The earliest systematic studies investigated the effects of excess maternal alcohol consumption, with its wide spectrum of sequelae including dysmorphic features, developmental delay, learning difficulties and behavioural problems. The consequent effects of maternal smoking on growth, cognitive development and behaviour have also been well documented since the early 1980s. Withdrawal symptoms in babies born to opiate-using mothers have been recognised since the 1970s, and

Table 1 Drugs detectable by hair analysis

Drugs of misuse	Therapeutic drugs	Tobacco ingredients	Alcohol metabolites
Amphetamine/ methamphetamine	Amitriptyline	Nicotine	Fatty acid ethyl esters
Cannabinoids	Benzodiazepines	Cotinine	Ethyl glucuronide
Cocaine	Carbamazepine		
Fentanyl	Ephedrine		
Ketamine	Haloperidol		
LSD	Quinolone antibiotics		
MDMA ('ecstasy')	Thiopental		
Opiates			
Phencyclidine (PCP)			