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If treated, babies with moderately severe hyperbilirubinaemia develop normally

Research question What happens to term babies who develop moderately severe hyperbilirubinaemia?

Answer With treatment, almost all of them develop normally.

Why did the authors do the study? Although extremely high concentrations of bilirubin in newborns can cause devastating brain damage, the long term effects of less extreme hyperbilirubinaemia are not as clear. The authors wanted to find out what happened to babies that were otherwise healthy but developed moderately severe hyperbilirubinaemia (serum concentration of bilirubin >428 µmol/l) within 30 days of birth.

What did they do? They identified 140 infants with serum concentrations of bilirubin >428 µmol/l and a comparison cohort of 419 control infants with serum concentrations <428 µmol/l. All were born at or near term in California from 1995 through 1998. Researchers who did not know which group the infants had been placed in assessed the neurological development of the children at a mean age of 5 years. Other data on development came from questionnaires given to the parents and medical records. Most of the babies with hyperbilirubinaemia were treated with phototherapy alone. Five had exchange transfusions.

The authors compared neurological development in the two groups of children and then did further analyses to find out if severity or duration of hyperbilirubinaemia had any impact on outcome. Finally, they did a subgroup analysis with the small minority of infants with evidence of immune mediated haemolytic disease.

What did they find? Children who had been treated for hyperbilirubinaemia did as well as control children in all tests, including tests for intelligence, visual motor integration, and motor skills. They were no more likely to have neurological abnormalities than controls, and responses from parents on questionnaires about development and behaviour were similar.

Severity and duration of hyperbilirubinaemia had no impact on outcome, although most children (130 out of 140) had peak bilirubin concentrations no higher than 511 µmol/l. Peak values fell quickly in most children. None of the infants developed kernicterus.

The nine children with immune mediated haemolytic disease did significantly worse on tests of intelligence and visual motor integration than 61 children with hyperbilirubinaemia but no immune mediated haemolysis

What does it mean? These findings are largely reassuring. The authors could find no evidence that moderately severe hyperbilirubinaemia, if treated, causes any long term neurological or behavioural problems in children born at or near term. But there were too few children in this study to say with any certainty what happens to infants whose bilirubin concentration rises above 513 µmol/l.

Follow-up was incomplete, however. Developmental data were available for more than 90% of children at 2 years, but only 59% of children with hyperbilirubinaemia and 40% of controls were assessed fully at 5 years.

The small subgroup of children with immune mediated haemolysis did worse than the rest, which is consistent with US guidelines recommending more aggressive treatment for these infants.

Newman TB et al. Outcomes among newborns with total serum bilirubin levels of 25 mg per deciliter or more. *N Engl J Med* 2006;354:1889-900.

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Editor's choice

What price integrity?

Whether we know it or not, we are all under some form of influence. The questions taxing contributors to this week's journal are, how well do we manage those influences, and can anyone be truly independent?

First, how worried should we be that medical education relies so much on the drug industry? Very, say Adriane Fugh-Berman and Sharon Batt writing in the *American Medical Association Journal of Ethics* (which devotes its June issue to looking for ways to reduce drug company influence on doctors, p 1410). "Only CME activities that are entirely free of pharmaceutical industry funding should qualify as education," they say. What's their plan for replacing the billions spent by drug companies on CME each year? Doctors should pay for it themselves. They say that US doctors can well afford to, having the highest median income in the US. The same may now be true of doctors in the UK.

But perhaps based on long experience that doctors won't pay for information, an editorial this week calls instead for strategic funding to create a proper market for good learning content (p 1403). The editorialists—James Johnson of the BMA, Stella Dutton and Edward Briffa of the BMJ Publishing Group, and Carol Black of the Royal College of Physicians—make their plea on behalf of producers of online learning resources, themselves included. But it's a cause we should all champion, since as doctors or patients, better educated doctors must be what we all want.

Journals too need to maintain their integrity. Writing in this week's *BMJ*, Joel Lexchin and Donald Light say journals should do more to protect editorial decisions from commercial influence (p 1444). They say (and I agree) that failing to do this would represent "a fundamental threat to the credibility of journals and to science as a whole." The *BMJ* takes its integrity seriously. Our transparency policy (http://bmj.com/advice/transparency_policy.shtml) describes the well established barriers that prevent commercial interests from influencing our decisions on what to publish. But we still rely on the drug industry for some of our revenue. Lexchin and Light make five recommendations to minimise influence, of which we already do three and are soon to adopt a fourth. We disclose conflicts of interest for everyone making editorial and business decisions for the journal (http://bmj.com/aboutsite/competing_interests.shtml). We preclude editors from direct financial ties with health related businesses. We publish full competing interest statements for authors. And we are soon to start posting all previous versions of published manuscripts. The only recommendation we have no plans to adopt is publishing detailed information about our sources of revenue. Perhaps we should.

Is total independence possible? Joe Collier, who writes the first of our new First Person features in this week's journal, has probably got closer than anyone (p 1447). But readers are warned: true independence comes at a personal cost.

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