surgeons, the standards of care committee of the British Thoracic Society has published guidelines covering the management of spontaneous pneumothorax.[5]

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Implementation of government recommendations for immunising infants at risk of hepatitis B

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Babies born to mothers positive for hepatitis B e antigen have an 80% risk of perinatal infection and a 40% risk of death from hepatitis B associated cirrhosis or hepatocellular carcinoma in later life; babies born to mothers who are positive for hepatitis e antibody are at much lower risk. The Department of Health recommends vaccination at birth and at the ages of 1 month and 6 months for babies born to infected mothers. Babies at high risk should also receive hepatitis B immunoglobulin within 12 hours of birth.[1] In 1992 we became concerned that these recommendations were not being carried out reliably in north Manchester. We therefore instituted a new protocol and audited the results.

Subjects, methods, and results

We produced a neonatal pack for hepatitis B vaccination for attachment to the notes of pregnant women who were infected with hepatitis B virus and were attending the antenatal clinic in North Manchester General Hospital. The pack comprised instruction sheets for the obstetric and paediatric staff and a vaccination notification form. When the virology department identified hepatitis B infection in a pregnant woman the consultant virologist sent her consultant obstetrician the pack with a letter explaining the results and detailing the recommended prophylactic schedule. After the birth the on call paediatrician was notified and administered recombinant vaccine (10 μg, Smith-Kline Beecham), with or without specific immunoglobulin, and then completed and sent two notification forms. One form initiated arrangements for vaccination at 1 and 6 months in the community paediatric clinic, and the other initiated arrangements for collecting blood samples from high risk babies in hospital at 6 and 12 months. The community and hospital clinics sent two appointments for each vaccination and venepuncture, and a health visitor called if the parents failed to attend with their baby. A retrospective one year audit of this vaccination programme was performed using hospital, community, and virology records.

Sixteen women who were carriers of hepatitis B virus (eight high risk carriers, eight low risk carriers, all with poor English) gave birth to 17 babies. Three mothers moved before giving birth and left no follow up address. The remaining 14 neonates received the first dose of vaccine after birth. One of the eight babies at high risk did not receive immunoglobulin, despite its having been prescribed. The immunoglobulin issued by the laboratory for this baby was later discovered unused. Only nine out of 17 babies received the second dose of vaccine and only three out of 17 the third dose. Vaccine was sometimes given late because of poor attendance (table). Blood samples were obtained after immunoglobulin and two or three doses of vaccine in three of the eight babies at high risk. A poor (< 100 IU/l) surface antibody response was detected in two, and the third was a carrier of the e antigen.

Uptake of second and third doses of hepatitis B vaccine in 17 babies born to mothers who were carriers of hepatitis B virus

	No of babies	
Second dose of vaccine:		
Vaccinated		9
At 1 month	7	
At 2 months	2	
Not vaccinated		8
Moved before birth*	3	
Community not notified	3	
Failed to attend	2	
Third dose of vaccine:		
Vaccinated		3
At 5 months	1	
At 8 months†	2	
Not vaccinated		14
Moved before birth*	3	
Community not notified	3	
Failed to attend‡	8	

*No follow up address, presumed not vaccinated.
†Twins; parents failed to bring them twice.
‡Two moved away, one emigrated.

Comment

Selective vaccination policies create enormous practical difficulties, especially when most of the affected babies are from ethnic minority groups that are very mobile and have a poor understanding of English. Universal rather than selective screening of pregnant women for hepatitis B virus is increasingly being adopted, and this will expand the difficulties encountered in immunising infants at risk.

Universal hepatitis B vaccination incorporated into the schedule of routine childhood immunisations would reduce the practical difficulties we identified with the current selective programme. At present, neither the second nor third dose of vaccine coincides with routine childhood immunisations in the United Kingdom. Different vaccination schedules (0, 2, and 6 months) resulted in a seroconversion rate of 99% at 1 year,[2] and protective antibody responses were seen one month after administering immunoglobulin and vaccine at birth.[3] This implies that the second dose of vaccine could be delayed. Selective immunoglobulin administration would be reserved for babies at high risk. The problem of inadequate maternal records resulting in failure to deliver this treatment could be minimised by using the neonatal pack.[4]

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