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Andrew J Pollard

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The BMA adds its voice to the call for universal childhood immunisation in the UK

Andrew J Pollard reader in paediatric infection and immunity, Oxford Vaccine Group, Department of Paediatrics, University of Oxford, Children's Hospital, Oxford OX3 9DU
andrew.pollard@paediatrics.ox.ac.uk

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Hepatitis B virus is a substantial threat to global health, with 360 million people chronically infected and more than 500 000 deaths each year from fulminant hepatitis, cirrhosis, and liver cancer.[1 2] After a call by the World Health Organization for the global introduction of vaccine prevention programmes by 1997,[3] 82% of countries in the world had introduced universal hepatitis B immunisation by 2005, and at least 55% of the world's children are now receiving three doses of the vaccine.[4]

To date, the United Kingdom has not offered universal immunisation, so most of its citizens are susceptible to infection. At the June 2007 annual representatives meeting, the BMA voted in favour of adding its voice to those of other expert groups in the UK calling upon the Department of Health "to introduce the hepatitis B vaccine into the childhood schedule without further delay."

The main argument against introducing universal immunisation is the relatively low incidence of disease in the UK compared with other countries.[5] However, 180 000 people in the UK are chronically infected with hepatitis B virus and can transmit infection to the unvaccinated population. Furthermore, the huge global burden of infection means that growing travel and migration in the 21st century put the UK population at risk of exposure to hepatitis B from abroad. Indeed, 3.3% of legal migrants to the UK are thought to be chronically infected, further adding to the pool of transmitters.[6 7]

Almost 1300 new cases of acute hepatitis B infection occur each year in the UK.[7] Moreover, 7700 new cases of chronic hepatitis B infection are detected each year, with huge cost to the National Health Service. Only 300 of these infections are acquired in the UK, however, and the remainder of cases are identified in people who entered the UK from countries with a high prevalence of the disease.[8]

Up to one third of people at risk of infection are difficult to identify.[7 9] As many as 40% of infections are acquired perinatally or in childhood, and infection at this age is far more likely to result in chronic carriage of the virus than infection in adulthood.[7 10] This makes early childhood an important target for prevention programmes. Fortunately, the hepatitis B virus can be controlled and, possibly, eventually eliminated by immunisation with highly effective vaccines.[11] Indeed, countries that have introduced universal childhood immunisation in the past 15 years now have a new generation of adolescents and young adults among whom transmission is being interrupted.

A key component of the UK targeted immunisation strategy is preventing perinatal transmission of hepatitis B virus to infants of mothers who are found to be infected during antenatal screening. Some studies have shown high uptake of screening, and one found that 92% of babies exposed perinatally receive their vaccination within 48 hours of birth and 86% complete a three dose course.[12] To improve coverage of children at risk, the favoured approach by the UK Joint Committee on Vaccination and Immunisation[5] is to extend the current targeted programme to families with at least one parent from a country with high prevalence. However, the committee rightly noted that "selective programmes can be difficult to implement." Furthermore, such an approach stigmatises people from particular groups and wrongly suggests that hepatitis B is not a concern for the rest of the population.

So, unfortunately, targeted strategies alone do not protect the population against hepatitis B, as it is impossible to reach all those who will be exposed. The easiest and cheapest way to implement universal immunisation is to add hepatitis B vaccine to the current UK primary immunisation schedule in early infancy using a hexavalent vaccine (against diphtheria, tetanus, pertussis, *Haemophilus influenza* type b, polio, and hepatitis B). This would avoid both extra visits to the doctor and more injections for the infant.

This approach is already widely used in Europe to prevent childhood hepatitis B infection, and a cohort of immune individuals will eventually reach adulthood. The addition of one more antigen to the current pentavalent combination vaccine should have little, if any, effect on the cost of the primary immunisation schedule. However, although universal immunisation of infants could eventually prevent new cases beyond the neonatal period, the high rate of chronic carriers in migrants to the UK means that a targeted neonatal screening programme is still needed to prevent perinatal transmission for the foreseeable future.

At this time, infant immunisation alone is insufficient to limit the transmission of hepatitis B virus, because of ongoing transmission among the non-immune adult population and the difficulty in identifying and reaching people at risk. For this reason, the current targeted programme aimed at high risk groups (injecting drug users, prisoners, etc) needs strengthening to reduce the burden of new infections until those in a universal immunisation programme reach adulthood.

The recent proposal to introduce vaccination for human papillomavirus vaccine in pre-adolescents next year (to prevent cervical cancer) could provide a vehicle for implementing a concomitant adolescent hepatitis B programme (to prevent liver cancer). This would generate a cohort of immune individuals more quickly than universal infant immunisation alone and hasten the control of the hepatitis B virus in the UK.

All references are in the version on bmj.com