EDITORIAL

Pertussis vaccination in pregnant women will protect neonates

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A TEMPORARY PROGRAMME TO VACCINATE PREGNANT WOMEN AGAINST PERTUSSIS WAS announced at the end of September, in the wake of figures released from the Health Protection Agency (HPA) showing an increase in cases in young infants in England and Wales. From January to August 2012 there were 302 cases reported in infants under 12 weeks compared with 115 cases for the same period in 2011. There were nine deaths in young children from pertussis in the first eight months of 2012 compared with seven in the whole of 2011. [1-2]

Overall there were 4,791 cases of pertussis reported across all age groups from January to August 2012 compared with 1,118 cases throughout the previous year.

'Passage of maternal antibodies to the fetus provides passive immunity'

The vaccine should be offered to women between weeks 28 and 38 of pregnancy. Most women are seen regularly in primary care from week 28 of pregnancy, and a national enhanced service has been negotiated to allow this vaccine to be given in primary care.[3] The vaccine may also be given in secondary care settings, or even in the delivery suite if services have failed to vaccinate women previously.

Whooping cough is by no means uncommon in adults, and even in vaccinated children.[4-5] The disease is most serious in very small infants – their small, soft airways make hypoxia and its consequences more likely. Protection from vaccine starts to kick in quite quickly; but most of the deaths and serious cases are in children too young to have developed any immunity from vaccination. In some countries vaccine is given earlier than two to three months after birth as in the UK. However, even if we were to vaccinate at a younger age, it would only prevent a few of these cases and deaths.

Epidemics of whooping cough have been reported in many parts of the world; but it is difficult to disentangle improved case-ascertainment (from more awareness of the possibility of disease and better availability of diagnostics) from a genuine increase in the disease.[6-10]

It is likely that, in the UK, we have never recorded more than 5% of cases; so an increase in notifications could indicate that, rather than an actual increase in the number of cases, we are simply reporting and recording more of them. However, reporting of death or serious illness in infants is far more reliable, and the increase in such cases suggests that there is a genuine increase in the overall population. The reason for the increase is not clear. Neither the disease, nor the vaccines produce very long-term immunity.

Because around three quarters of infants catch their whooping cough from their parents or other close household contacts[11] some countries have adopted a policy known as cocooning: vaccinating all members of a household when a baby is due.[12] This has been expensive and difficult to achieve in practice.[13-15]

Vaccinating pregnant women is safe. Not only does it reduce the chances that the baby will catch pertussis from its mother; but passage of maternal antibodies to the fetus provides passive immunity that can protect the baby until old enough to have responded to, and be directly protected by, vaccination.[14] Primed adults respond quickly to a dose of vaccine, but the antibody levels quickly drop again. There is little antibody passage from mother to fetus before week 34 of pregnancy, and the timing of vaccination, from 28 weeks, is set to ensure maximum antibody transfer.

Ideally, we would have a vaccine that would provide long-term immunity, so we achieve real herd immunity; but in the meantime this programme is our best hope for protecting infants.

Disclaimer
The views expressed are those of the author and not necessarily those of the HPA.

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