Whooping cough vaccination for pregnant women

Effective prevention of whooping cough among infants?

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In 2019, all pregnant Dutch women will be offered a free booster vaccination with the DKTP (diphtheria, whooping cough, tetanus and poliomyelitis) vaccine in the third trimester of their pregnancy. The aim of this vaccination programme is to reduce the risk of whooping cough among their infants in the first few months after birth, and to prevent complications and mortality due to whooping cough. The speed with which this new vaccination is being introduced is surprising, as there is no firm evidence that administering a DKTP booster in this way protects infants against complications and mortality. On the other hand there is some evidence for a reduced antibody reaction among children when they later receive the usual DKTP vaccinations under the national vaccination programme. The clinical relevance of this evidence is unclear.

Ge-Bu Indication

- The numbers of cases of whooping cough among the Dutch population tend to show epidemiological peaks every 2–4 years, without clear indications of an overall increase in whooping cough cases.
- About 70% of the total number of cases of whooping cough among children younger than 1 year concern infants below the age of 2 months.
- Research has shown that infants younger than 2 months have higher antibody counts against whooping cough if their mother has received a DKTP vaccination in the third trimester of her pregnancy.
- The efficacy of DKTP vaccination of pregnant women in terms of preventing whooping cough among their infants has only been reported from case-control studies with limited level of evidence.
- Based on the data available in 2015, the Health Council of the Netherlands has merely assumed that its recommended DKTP vaccination of pregnant women might be effective in preventing whooping cough among their infants.
- There are indications that administering DKTP to mothers has a negative effect on the antibody count against whooping cough in children later, when they receive the regular primary vaccination and re-vaccination (the so-called blunting effect).
- This blunting effect may be larger than was assumed by the Health Council. The clinical relevance of this effect will have to become clear in the longer term from epidemiological research among older children.
A 60% vaccination rate is assumed to result in a low public health gain, with a number needed to vaccinate (NNV) of 1000 for complications and 100 000 for mortality.

There is as yet no evidence to support what is ultimately the main argument for maternal vaccination, i.e. reducing the numbers of complications and deaths among infants younger than 2 months.

**Literature references**

   2018
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The literature refers to the Dutch text

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