II-2. Rationale of immunization during pregnancy, including direct and indirect effects (protection of the fetus via transfer of antibodies)

Rationale of immunisation during pregnancy, including direct effects (protection of the foetus via transfer of antibodies):

1. As a result of the transplacental passage of antibodies, maternal immunisation with subsequent Ig G transport from a mother to foetus can reduce the risk of vaccine-preventable diseases and prevent and/or minimize the severity of infectious diseases that may occur both in pregnant women and in infants, who may be too young to receive their first vaccination or in the first months of life before the start or completion of the suggested vaccination schedule. Immunization during pregnancy to protect both the woman and her infant is not new.

2. Maternal immunization programs to protect against maternal and neonatal tetanus have been proven to be effective (and have been ongoing for decades. Maternally derived pathogen-specific antibodies induced by vaccination during pregnancy can provide infants with the protection they need during a period of vulnerability.

3. The primary indication for pertussis vaccination during pregnancy, most often administered as the combined Tdap vaccine, is for the prevention of pertussis in young infants, who have a disproportionately high burden of severe pertussis. Since 2012, pertussis vaccination has been recommended in the United States and the United Kingdom for every pregnancy. After the implementation of this approach, the effectiveness as well as the safety, immunogenicity, antibody transfer, and impact on infant immunization has been well demonstrated. Other countries, such as Australia, New Zealand, Belgium, Argentina, Spain and Brazil, also recommend pertussis vaccination during pregnancy.

4. Although the use of maternal acellular pertussis vaccine to prevent severe neonatal disease has the rationale to protect the infant, not the mother, both mothers and infants have potential benefit from pertussis or other known pregnancy vaccines, and they are known to be safe, well tolerated, and immunogenic. The studies conducted in many countries have shown high effectiveness of maternal pertussis vaccination, as well as safety of the maternal pertussis immunization programs in those countries did not identify an increased risk for a range of maternal, foetal, and neonatal outcomes.
Topic conclusions

Maternal immunization programs have been proven to be safe and effective. Maternal immunisation with subsequent Ig G transport from a mother to foetus can reduce the risk of vaccine-preventable diseases and prevent and/or minimize the severity of infectious diseases that may occur both in pregnant women and in infants.