



Prevention and control of perinatal hepatitis B
virus (HBV) transmission in the WHO
European Region
Istanbul, Turkey, March 15-17, 2006

Meeting conclusions

Rationale for meeting

- Some agencies downgrading HB vaccination especially within maternal and child health while others refocusing on Maternal, *Newborn* and Child Health, e.g. the recently launched Partnership for Maternal, Newborn and Child Health (including 5 UN bodies: WHO, UNICEF, UNFPA, UNAIDS, World Bank)
- Disease burden still substantial
- Forum for exchange of information, much of which is new and surprising, especially field experiences of out-of-cold-chain delivery, and hepatitis D (hardly mentioned in meeting on Strengthening immunisation systems and introduction of hepatitis B vaccine in Central and Eastern Europe and the Newly Independent States, May 2004)
- Hepatitis B vaccination is in danger of losing its place on the agenda of governments, agencies and organizations owing to interest in other diseases or conditions and to the success of programmes so far

Objectives

- To review current epidemiology of perinatal transmission of hepatitis B virus
- To summarize the scientific evidence on prevention and control of HBV transmission through vaccination
- To provide an overview of birth dose administration and maternal screening
- To share experiences on prevention and control of perinatal HBV transmission
- To identify keys and barriers to successful prevention and control programmes
- To discuss lessons learnt and opportunities
- To discuss the role of partner agencies and organizations
- To set prevention of HBV transmission in the context of mother and child health

Epidemiology and health systems

- Hepatitis B is leading cause of chronic liver disease in high-endemicity countries in comparison to hepatitis C in low-endemicity countries
- Need to define and quantify disease burden, which has to be taken into account in national vaccination strategies
- Higher eAg positivity in carriers of sAg results in increased transmission rate
- Very high rates (up to 20%) of hepatitis D reported in some countries
- Variations in prevalence rates across countries - including socioeconomic and rural/urban differences
- Routes of transmission – predominantly perinatal, but still in many cases the route remains unknown; early childhood, parenteral and sexual routes are also significant

Epidemiology and health systems

- Health-care facilities: considerable variations in % of births in HC facilities (often more than 95%) or at home (30% and higher in some countries or regions)
- Results of questionnaire from 8 countries: 2006 data, comprehensive and improving in quality
- Countries have intermediate or high endemicity; all have introduced universal hepatitis B vaccination, with a major effort to introduce a birth dose within 24 hours and with flexibility on the timing of the third dose (as a function of existing immunization programmes), all using monovalent hepatitis B vaccine for the birth dose, high reported coverage rates in all, improvements in functioning of the cold chain. All had centralized vaccine procurement, mostly through international agencies

Birth dose administration

- The universally agreed recommendation (VHPB, WHO, CDC) for the birth dose is "as near as possible to birth", and preferably within 24 hours. Outside health-care facilities, more flexible schedules (even up to 7 days after birth) are adopted, even though they are not recommended, to reflect the realities in the field
- No contraindication to use of hepatitis B vaccine in neonates: questionnaire revealed numerous false arguments, but WHO specifies only two (allergic reaction to any component of the vaccine and anaphylaxis to previous dose)
- Preterm babies (< 2 kg): low birth weight not a contraindication to vaccination. Vaccine is safe but with possibly reduced immunogenicity.

Recommendation for preterm babies: give birth dose by 24 hours with three not two subsequent doses

Maternal screening and administration of HBIg

- Different policies on maternal screening - some countries do and others do not screen; screening is costly and not always relevant in view of a birth dose programme
- HBIg: current data indicate that offering HBIg adds marginal advantage to protective efficacy. HBIg given in only some instances in two countries
- Existing national policies of giving hepatitis B vaccine alone are justifiable

Evidence of prevention and control

- Data from several countries provide conclusive evidence of protective efficacy of newborn vaccination
- Great reduction in disease and infection rates
- No clinical signs of acute hepatitis and no chronic infections seen in any long-term cohort with more than 15 years' follow-up
- Routine booster doses following a universal vaccination programme are not advocated for any group
- Flexible mathematical model can be tailored to individual country situations and can be used to assist the policy-making process and implementation of HBV vaccine programmes

Keys to successful programmes

- Political will at the highest level (e.g. presidential level downwards)
- In areas of high endemicity, rural populations, difficult terrain and a high proportion of home deliveries, raising awareness and training of health workers, out-of -cold chain strategy and new tools (e.g. Uniject and VVMs) significantly improved timeliness of birth dose vaccination, with no loss of immunogenicity
- Single-dose vials reduce wastage
- Take advantage of existing structures or staff as opportunities for innovation, e.g. midwives (including provision of sharps disposal box); and imaginative use of existing media, such as TV quiz shows.
- Communications via mass media (especially national strategy) and social mobilization

Impediments to successful programmes

- Lack of capacity of the health system
- Poor surveillance of hepatitis cases
- No follow up of vaccinees to monitor impact of intervention
- Difficulty in changing national guidelines, e.g. on vaccination of preterm babies; wide dissemination of guideline is needed
- Innovation needed to address the issue of home deliveries
- Training of health-care workers, including nurses, midwives and medical professional students is essential
- Misconceptions and lack of clarity about contraindications

Impediments to successful programmes

- Gaps in awareness of the broader medical profession
- Poor knowledge and awareness in decision-makers and the general population
- Sustainable procurement and financing, with need for discussions with finance as well as health ministries, partners and donors
- Inadequate mechanisms for disposal of medical waste – no easy answers
- Financial tool for encouraging institutional change
- Media/law courts and legal decisions
- Lack of differentiation or separation of acute and chronic hepatitis B in reporting from surveillance systems

Partners

- WHO, UNICEF, World Bank, Asian Development Bank, GAVI, Government of Japan, VHPB
- Governments and national ministries, especially of health and finance, agencies (e.g. CDC, US Agency for International Development) and universities
- Foundations and nonprofit organizations - Bill and Melinda Gates, PATH, Mstislav Rostropovich
- New Partnership – 5 United Nations agencies (Maternal and child health context)
- Pledge to all partners to continue to prioritize hepatitis B vaccination

Lessons learnt

- Bring vaccine delivery to the neonate: participating countries have achieved success in vaccinating neonates, but challenges remain in terms of coverage and timeliness
- HBV vaccination provides a safety net against perinatal transmission of hepatitis B virus, and also prevents early childhood, parenteral and later sexual transmission of HBV, and also protects against D (example of Italy where HBV vaccination lead to elimination of D)
- Combined vaccines have good immunogenicity and can replace separate vaccines in areas of high hepatitis B endemicity
- Vaccine procurement: need to involve finance as well as health ministries
- Need for clear specifications in tenders for vaccines, e.g. provision of vaccines with VVMs, restatement of open-vial policy, provision of instructions in appropriate languages
- Cold chain: freezing identified as threat to vaccine potency – taking the vaccine out of the cold chain does not mean putting it in the cold; flexible strategies needed to modify cold chains

Lessons learnt

- Model exists and is available and accessible for application of national data; (impact of vaccination is highest in countries with highest rates of perinatal transmission)
- Screening of pregnant women is acceptable if already in place, but not a high priority compared with universal HBV vaccination of neonates, which is a "worthwhile investment" ; in countries with high prevalences, it may not be feasible or the most reliable or convenient option.
- Hepatitis B vaccine can be administered successfully and effectively with other vaccines (BCG and OPV)
- Need to ensure effective delivery of hepatitis B vaccine for all neonates
- Data on HBIg confirm that countries' existing policies of giving vaccine alone are defensible
- Surveillance systems need to be supported by laboratory systems
- Need for capacity building of health systems in general

Lessons learnt

- New tools (e.g. Uniject, autodisable syringes, VVMs, out-of-the-cold chain approaches) are accepted and training is essential; together they do improve delivery of vaccine
- Disposal of medical waste is a very general problem without ready solutions
- Guidelines may need revision and/or restatement - on cold-chain strategy, administration of birth dose within 24 h, HBIg guidelines, open-vial policy
- Need to communicate successes to health professionals (including medical schools), in appropriate languages and forms: digests of information, fact sheets, ...
- Need for improved communication at all levels – general public, politicians, and media in appropriate languages
- Meeting focused on Central Asian Republics and Kazakhstan but conclusions are applicable to many more countries
- Value of international fora and workshops for exchanging information and relaying important messages and concerns to intergovernmental agencies