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Question: Should hepatitis B vaccine within 7 days following birth be used for the prevention of hepatitis B virus infection in infants?

Setting: General population (global)

Conclusion: The evidence by outcome is as follows. 1) Moderate quality evidence to support effectiveness of HepB given within 7 days of birth to prevent HBV infection. 2) Moderate quality evidence to support effectiveness of HepB given within 7 days of birth to prevent chronic HBV infection.

Quality assessment						Summary of Findings	Importance
No of studies	Design	Limitations	Inconsistency	Indirectness	Imprecision	Quality	
hepatitis B infection (anti-HBc positive) (follow-up 2-8 years; anti-HBc)							
1 ¹	observational study	no serious limitations	no serious inconsistency	no serious indirectness	no serious imprecision	⊕⊕⊕O ² MODERATE	CRITICAL
hepatitis B chronic infection (HBsAg positive) (follow-up 2-8 years; HBsAg)							
1	observational study	no serious limitations	no serious inconsistency	no serious indirectness	no serious imprecision	⊕⊕⊕O ³ MODERATE	CRITICAL

¹ No RCTs were found that addressed the issue of efficacy of HepB when the first dose was given between "at birth" and 4-6 weeks with HBV infection as an outcome. One observational study looked at outcome of children receiving their first HepB vaccine at different times following birth. This study divided children into three groups based on age at first dose of vaccine in days (1-3, 4-7, 8-61, and ≥62).

² This study showed a strong relationship between time of first dose and probability of infection with a 4.3 OR (95% CI 2.2-8.4) for each unit increase in age (anti-HBc positive). This was statistically significant for children receiving their first dose after 7 days of age.

³ This study showed a strong relationship between time of first dose and chronic infection (HBsAg positive) with a 3.3 OR (95% CI 1.3-8.2) for each unit increase in age.

Bibliography:

Marion SA, Tomm Pastore M, Pi DW, Mathias RG: Long-term follow-up of hepatitis B vaccine in infants of carrier mothers. Am J Epidemiol 1994;140:734-746.