Effectiveness of a dedicated Hepatitis B immunisation service in the paediatric department in a district general hospital in Southend, UK from 01/01/2014 - 01/03/2016

A. Nowacka, M. Rahman

Department of Paediatrics, Southend University Hospital (SUH), Westcliff-on-Sea, Essex, SS0 0RY, UK

Introduction

- 1. Hepatitis B infection can be transmitted from infected mothers to their babies at the time of birth. Vertically acquired infection has a **90% chance for the baby to become a chronic carrier**. 95% of chronic carriage can be prevented by delivering Hep B vaccination.
- 2. The risk of transmission is **70 to 90%** from women seropositive for hepatitis B surface antigen (HBsAg) and hepatitis B e antigen at the time of delivery.
- 3. Women without the e antigen or with anti-HBe transmit the infection **only 5 to 20%** of the time.
- 4. Previous Hepatitis B vaccination schedule include:
 - At birth dose-within 24 hrs of birth
 - 1 month
 - 2 months
 - 12 months
 - 14 months-Serology

Objectives

- 1. This re-audit's aim was to measure performance at SUH in hepatitis B vaccination coverage against local guidelines for antenatal and postnatal management of babies who qualified for hepatitis B vaccination.
- 2. Results were compared with previous audit performed in 04/2006-12/2008.
- 3. Main answers sought were whether we were continuing to maintain good level of care for babies' requiring Hepatitis B vaccination in comparison with previous audit, how efficient we were in initiating Hepatitis B immunisation to at-risk neonates, how good we were in our immunisation coverage and did we follow these babies till the end point.

Methods

This Audit was retrospective cohort review of neonates born in SUH between 01/01/2014-01/03/2016 who received hepatitis B vaccination before discharge as per local guidelines. Data collection was identified by list of positively screened mothers from antenatal screening and cross-checked with data from Hepatitis B Immunisation lead nurse specialist.

Patients

Total of 25 neonates received hepatitis B vaccination before discharge from hospital in the studied period. 4 babies were born below 37 weeks of GA. 68% were female.

Results

Total of 9833 pregnant women were booked at SUH between 01/01/2014-01/03/2016

16 women were antenatally found to be hepatitis B positive.

25 babies received hepatitis vaccination as per protocol

- Maternal hepatitis B serology positive 64% (16/25)
- History of maternal iv drug abuse 28%(7/25)
- Paternal hepatitis B positive status 8%(2/25)
- Hepatitis C positive 12%(3/25) (all positive mothers were also having h/o iv drug abuse)

Results

Conclusion

Results showed that designated immunisation nurse increases likelihood of completion of the immunisation program including serology testing. Despite of having designated nurse specialist it is still difficult to complete full course of Hepatitis B vaccination till the end point (sending bloods for hepatitis B serology). Our trust is unique in terms of following up those babies in comparison to other trusts when patients are referred back to primary care after receiving first dose of vaccination as inpatient.

Discussion

- Hepatitis B vaccine has been introduced for newborns born in the UK, making it one of the last countries in Europe to introduce a universal hepatitis B vaccination programme for all infants.
- All babies born on or after 1 August 2017 are eligible for hexavalent vaccine, which protects against diphtheria, tetanus, pertussis, hepatitis B, poliomyelitis, and disease caused by *Haemophilus influenzae* type b (Hib). It will be given through the childhood primary immunisation schedule at 8, 12, and 16 weeks of age
- Babies born to hepatitis B infected mothers will follow an accelerated immunisation schedule with a dose of hepatitis-B containing vaccine at birth, 4 weeks and hexavalent vaccine doses at 8, 12 and 16 weeks.
- A further dose of monovalent HepB vaccine is given at one year of age, alongside a test for HBsAg. Testing at one year of age is important to identify babies who have become chronically infected with hepatitis B despite vaccination

References

- NICE guidelines, Hepatitis B Quality Standard published on 28th July 2014
- Green Book (Immunisation against infectious disease) – recent update August 2017
- Public Health England. The hexavalent DTaP/IPV/Hib/Hep B combination vaccine: information for healthcare practitioners about the inclusion of hepatitis B vaccine in the routine infant immunisation programme. Jun 2017.
- World Health Organization. Immunization, vaccines and biologicals: hepatitis B. Jun 2017.