

CURRENT ABSTRACT*

FEVER :PREDICTOR OF SEPSIS IN INFANTS LESS THAN TWO MONTHS OF AGE

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Fever without an identifiable focus of infection in infants less than two months of age is often a dilemma to pediatricians. Some published studies revealed that it is associated with serious bacterial infection.

This study aimed to determine whether fever alone can be used as a single criterion to predict sepsis in infants less than two months of age.

A total of 264 subjects less than two months old admitted at GCGMH during a period of 24 months, from Jan. 1, 1995 to Dec. 31, 1996 were studied. These patients were admitted for fever alone; for fever associated with signs and symptoms of sepsis; or for other signs and symptoms but afebrile on admission. One hundred seventy two (65.152%) patients were identified to have sepsis based on their laboratory results such as the presence of leukocytosis or leukopenia, neutropenia, thrombocytopenia and/or positive blood culture result. There were 22 (12.791%) patients identified to have sepsis who were admitted for fever alone, $X^2=7.758$ (>3.841 at $p=0.05$).

Neutropenia which comprised 69.767%, was the most frequent laboratory result noted associated with sepsis.

A total of 35 patients had positive blood culture result and mostly came from patients who were admitted for fever with associated signs and symptoms of sepsis. Seventeen were identified as true pathogens while 18 were considered contaminants. Of the 17 true pathogens, nine were considered major ones and *S. pneumoniae* ranked first followed by *S. pyogenes*.

THE SIGNIFICANCE OF SERIAL C-REACTIVE PROTEIN LEVELS IN NEONATAL SEPSIS: A PRELIMINARY REPORT

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Early recognition is important for the successful treatment and outcome of neonatal infections. C-Reactive Protein (CRP) is known to be produced by the fetus and found in high concentration in neonates with sepsis, thus has been proposed as an early indicator of neonatal sepsis. This study was undertaken to determine the usefulness of serial CRP determinations in as-

sessing neonatal infection with the following objectives: (1) To determine the sensitivity and specificity of serial CRP levels in predicting the occurrence of neonatal sepsis, (2) To determine whether the sensitivity of CRP, either in proven or presumed neonatal sepsis, is enhanced with serial determinations, and (3) To determine whether there is an optimum time obtaining CRP levels that will best predict the occurrence of neonatal sepsis. The study sample comprise 50 neonates, fullterm, delivered from July to December 1996, with a perinatal history suggestive of possible infection. Investigation included complete blood count, Chest X-ray, blood culture and serial CRP at 0, 12, and 24 hours. Serum concentration was measured by Latex Agglutination test. Among the 50 neonates, 16 (32%) showed positive blood culture results of which 4(25%) were positive for CRP at 12 and 24 hours. The sensitivity and specificity of CRP in detecting the presence of definite sepsis were 25% and 91%, probable/localized infection 33.3% and 87.2% and both definite and localized infection 29.4% and 93.9%. Both definite and probable/localized infection, CRP was found to have a low sensitivity of 29.4% and high specificity of 93.9%. The optimum time in obtaining CRP levels would be at 12 to 24 hours after birth. Further investigations on wider scale, other laboratory work-ups and serial quantitative CRP determination were recommended. Until then, CRP may only serve as an ancillary procedure in the diagnosis of neonatal sepsis.

MEASLES ANTIBODY RESPONSES TO MEASLES VACCINE GIVEN AT 9 MONTHS OF AGE IN RELATION TO MATERNALLY DERIVED MEASLES ANTIBODIES

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Background. Measles continues to cause serious disease among children in developing countries despite the availability of an effective vaccine. The Philippine Department of Health, following the current World Health Organization recommendation, gives the first dose of measles vaccine at 9 months in spite of possible interference of maternal antibodies with the infant's response. However, measles has been reported among infants as young as 4 months and some physicians have decided to give the first dose of measles vaccine as early as 6 months of age. This study was conducted in Cabuyao, Laguna, the Philippines as part of a maternal immunization project to find out the effect of maternally derived measles antibodies on the antibody response of infants when vaccinated with a monocomponent live, attenuated measles vaccine (Rovax, Pasteur Merieux Connaught) at 9 months of age. Maternal blood samples as well as the 4th, 9th, 10th and 24th month infant blood samples were assayed for anti-measles antibodies using the commercial Behring measles EIA. 147 mother-infant pairs were enrolled. All mothers had measles antibody titers ≥ 150 mIU/ml (considered protective) with a geometric mean

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concentration (GMC) of 2130 (range – 190 to 8900 mIU/ml). At the mean age of 20 weeks (range 18 to 29 weeks), 88% of the infants had antibodies below 150 mIU/ml. Five (3.6%) infants had antibodies > 150mIU/ml just before the time of measles vaccination, suggesting that they may have been infected by the virus prior to vaccination. 96% of the infants responded to vaccination and developed protective antibody titers while 5 infants did not respond. By 2 years of age, 95% of the infants continued to have antibody concentrations >150 mIU ug/ml. There was no correlation between the maternal antibody concentration and infants' response vaccination. None of the infants developed measles.

Maternally derived measles antibodies decline by 4-5 months of age, response to measles vaccination is good. As more children are born to vaccinated mothers, intensified sero and disease surveillance is needed to estimate the most optimal time point of measles vaccination in national EPI in developing countries.

TETANUS NEONATORUM: A7-YEAR EXPERIENCE AT NATIONAL CHILDREN'S HOSPITAL

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Neonatal Tetanus is one of the leading causes of neonatal mortality in developing countries and often underreported. A retrospective study of 30 patients with diagnosis of neonatal tetanus admitted at National Children's Hospital from 1991-1997 were reviewed to identify the risk factors in its development and identification of mothers who received tetanus toxoid prior to delivery and to present the different sequelae and developmental outcomes of this neonates.

Most of the deliveries occurred at home in 83% of cases attended by a traditional birth attendant ("hilot") in 53% (16 cases), midwives in 37% (11 cases) and 10% (3 cases) were delivered by an M.D. Blade was used to cut the umbilical cord in 9 patients (30%) while 18 (60%) used scissors. Two mothers (7% of cases) received 3 doses of tetanus toxoid while 83% had no vaccination. 26 patients belong to low socioeconomic status. All patients presented with spasms, trismus and poor suck. 20 (67%) patients had complications with pneumonia and sepsis being the most common. Case fatality rate was 53% 6 (43%) out of 14 patients discharged improved had cerebral palsy.

Risk factors identified were home delivery, low socioeconomic status, increase in sibling numbers, use of unsterile cutting instruments, delivery attended by "hilots" and lack of immunization. With its high mortality rate and severe sequelae, strict implementation of government program with at least 2 of tetanus toxoid given as well as ensuring clean delivery practices and further evaluation of the program may eliminate this disease.

PRACTICE PATTERNS ON THE USE OF ANTIBIOTIC IN THE MANAGEMENT OF HIGH RISK NEONATES

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Neonatal sepsis is a life threatening emergency and any delay in treatment may cause death. Initial signs of neonatal sepsis are slight and non-specific. Yurdakok M. reported that in suspected sepsis, two or three days empirical antibiotic therapy should begin immediately after cultures have been obtained without awaiting the results. This study aims to determine the practice pattern in the management of neonates suspected of sepsis.

A retrospective chart review was done on all neonates delivered at Perpetual Succour Hospital from January 1997 to December 1998 with blood cultures. The subjects were divided into two: neonates with high risk for sepsis due to perinatal risk factors and neonates who presented with clinical manifestations suggestive of sepsis. A total of 290 newborns were included in the study.

Among the 290 cases, 230 (79%) newborns had septic work-up due to perinatal risk factors and 60 (20.6%) newborns had work-up due to the presence of clinical manifestations. A total of 42 (14%) subjects had positive blood culture compared to 248 (85.5%) subjects with negative yield. Premature rupture of membrane was identified as the most common perinatal risk factor with 110 cases of 42% of cases. The most common clinical manifestation was vomiting with 15 cases or 21.7% of cases. Majority of the antibiotics were started as empiric treatment Ampicillin and Amikacin. The mean duration of treatment for blood culture (+) neonates with clinical manifestation was 6.5 days and 7.1 days for neonates with perinatal risk factors alone. The mean duration of treatment for neonates with (-) blood culture but with clinical manifestation was 5.4 days for neonates with perinatal risk factors. The most common organism isolated was gram-positive cocci. Methicillin sensitive *Staphylococcus aureus* ranked 1st in 23.8% of cases followed by Methicillin resistant *Staphylococcus aureus* and *Pseudomonas stutzeri* in 16.7 of cases. Coagulase-negative *Staphylococcus* accounted for 14.2% of cases. Sensitivity pattern was compared with PSH-CHI Antibiotic Resistance Pattern Report done in October-December 1998.

It is noted that there is a predominance of gram positive organisms isolated in the blood cultures which could either be a contamination or significant bacteremia. It is therefore recommended that a local prospective study be done on neonates who are high risk for infection to determine if predominance of no socomial pathogens are still evident. Aseptic collection and proper technique of blood extraction should be emphasized.