

for histopathological examination and in situ PCR testing.

**RESULTS:** Histopathological examination confirmed the clinical diagnosis in only 45% of the cases; nonspecific histopathology was reported for the remaining 55% of the cases. In situ PCR showed a positivity of 57.1% in the early/localized form of leprosy (indeterminate/borderline tuberculoid) and 61.5% in the borderline borderline/lepromatous group. When compared with the histopathological examination, a significant enhancement of 15% in diagnosis was seen. With in situ PCR, the diagnosis could be confirmed in 4 (36.3%) of 11 cases with nonspecific histopathological features (which is common in early disease) in addition to confirmation of 8 (88.8%) of 9 histopathologically confirmed tissue sections. Histopathology and in situ PCR combined together confirmed the diagnosis in 13 (65%) of the 20 cases.

**CONCLUSIONS:** In situ PCR is an important diagnostic tool, especially in early and doubtful cases of leprosy.

## DETECTION AND MOLECULAR SEROTYPING OF GROUP B *STREPTOCOCCUS* IN FATAL NEONATAL PNEUMONIA IN CHINA

Submitted by Jianghong Deng

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**INTRODUCTION:** Group B *Streptococcus* (GBS) has been recognized as an important pathogen in neonatal infectious disease. However, there are few data on the prevalence of neonatal GBS infection in China.

**OBJECTIVE:** Our aim was to estimate the infection rate of GBS in neonatal pneumonia in China and identify distribution of the GBS serotype.

**METHODS:** We retrospectively studied 200 children with fatal neonatal pneumonia who died between 1953 and 2004; 34 fatal neonatal cases without any infectious disease were used as a control group. Paraffin-embedded lung tissues were collected for total genomic DNA extraction. Polymerase chain reaction (PCR) and Southern blotting were used for GBS detection and molecular serotyping.

**RESULTS:** (1) The positive rate of GBS in the pneumonia group was significantly higher than that in the control group (PCR: 26% vs 3% [ $P < .01$ ]; Southern blot: 65% vs 18% [ $P < .01$ ]). (2) The positive rate in neonates younger than 7 days was significantly higher than that in neonates older than 7 days (PCR: 37% vs 13% [ $P < .01$ ]; Southern blot: 72% vs 52% [ $P < .05$ ]). (3) Risk factors were identifiable for most GBS-positive cases. (4) In the pneumonia group, 22 GBS-positive cases were serotypable: 7 cases were identified as serotype Ia, 6

cases were serotype III, 5 cases were serotype II, and 1 case was serotype Ib.

**CONCLUSIONS:** In China, GBS is an important pathogen in fatal neonatal pneumonia, especially in early-onset cases. Serotypes Ia, III, and II were the most common serotypes identified.

## PERIPHERAL BLOOD COUNT FOR DENGUE SEVERITY PREDICTION: A PROSPECTIVE STUDY IN THAI CHILDREN

Submitted by Nanthakorn Eu-Ahsunthornwattana

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**INTRODUCTION:** Dengue viral infection has a wide range of severity levels and requires different levels of medical attention. Early severity prediction using clinical features is difficult. Certain lymphocytic subtypes can be used to predict severity; we postulate that peripheral blood counts can also predict severity, which would be more useful in smaller rural hospitals.

**OBJECTIVE:** We aimed to compare the peripheral blood counts between patients with mild dengue infection and those with severe dengue infection and identify simple yet sensitive early severity predictors.

**METHODS:** We enrolled 91 patients with serologically confirmed dengue infection who were admitted to King Chulalongkorn Memorial Hospital. Their leukocytic counts on admission were compared. Potential predictors were identified by using receiver-operating-characteristic analysis.

**RESULTS:** Compared with patients with mild infection, those with severe infection (dengue hemorrhagic fever grade II or worse) had a higher leukocyte count (3580 vs 3050 cells per  $\mu\text{L}$ ;  $P = .04$ ), and fewer had leukopenia on admission (70% vs 89%;  $P = .03$ ). They also had a lower percentage of "typical" lymphocytes (24% vs 40%;  $P = .02$ ). Two predictors were identified; either one classified ~19% of all admitted patients as being at low risk. Typical lymphocyte counts of  $<40\%$  excluded patients with mild disease with 89% sensitivity and 24% specificity (negative predictive value: 77%; positive predictive value: 45%). A combination of parameters [(white blood cells per  $\mu\text{L}$ ) + 470  $\times$  (% typical lymphocytes) + 5  $\times$  (atypical lymphocytes per  $\mu\text{L}$ )  $\geq -14\ 950$ ] improved the sensitivity and specificity to 92% and 26% (negative predictive value: 82%; positive predictive value: 46%).

**CONCLUSIONS:** The absence of leukopenia and a low percentage of typical lymphocytes predict severe dengue illness. Simple hematologic parameters may be used to reduce unnecessary admissions of patients with sus-

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