

## ABSTRACT SECTION

### 1. Errors of Diagnosis in Pediatric Practice: A Multisite Survey

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#### PEDIATRICS

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#### Abstract

**OBJECTIVE** We surveyed pediatricians to elicit their perceptions regarding frequency, contributing factors, and potential system- and provider-based solutions to address diagnostic errors.

**METHODS** Academic, community, and trainee pediatricians ( $N = 1362$ ) at 3 tertiary care institutions and 109 affiliated clinics were invited to complete the survey anonymously through an Internet survey administration service between November 2008 and May 2009.

**RESULTS** the overall response rate was 53% ( $N = 726$ ). More than one-half (54%) of respondents reported that they made a diagnostic error at least once or twice per month; this frequency was markedly higher (77%) among trainees. Almost one-half (45%) of respondents reported diagnostic errors that harmed patients at least once or twice per year. Failure to gather information through history, physical examination, or chart review was the most-commonly reported process breakdown, whereas inadequate care coordination and teamwork was the most-commonly reported system factor. Viral illnesses being diagnosed as bacterial illnesses was the most-commonly reported diagnostic error, followed by misdiagnosis of medication side effects, psychiatric disorders, and appendicitis. Physicians ranked access to electronic health records and close follow-up of patients as strategies most likely to be effective in preventing diagnostic errors.

**CONCLUSION** Pediatricians reported making diagnostic errors relatively frequently, and patient harm from these errors was not uncommon.

**Key Words:** diagnostic errors • children • patient safety • missed and delayed diagnosis • misdiagnosis • malpractice

## 2. Yield of Lumbar Puncture among Children Who Present With Their First Complex Febrile Seizure

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### Abstract

**OBJECTIVE** to assess the rate of acute bacterial meningitis (ABM) among children who present with their first complex febrile seizure (CFS).

**DESIGN AND METHODS** This study was a retrospective, cohort review of patients aged 6 to 60 months who were evaluated in a pediatric emergency department (ED) between 1995 and 2008 for their first CFS. Cases were identified by using a computerized text search followed by a manual chart review. Exclusion criteria included prior history of nonfebrile seizures, an immunocompromised state, an underlying illness associated with seizures or altered mental status, or trauma. Data extracted included age, gender, seizure features, the number of previous simple febrile seizures, temperature, a family history of seizures, findings on

physical examination, laboratory and imaging study results, and ED diagnosis and disposition.

**RESULTS** We identified 526 patients. The median age was 17 months (interquartile range: 13–24), and 44% were female. Ninety patients (17%) had a previous history of simple febrile seizures. Of the patients, 340 (64%) had a lumbar puncture (LP). The patients' median white blood cell count during a CFS was 1 cell per  $\mu\text{L}$  (interquartile range: 1–2), and 14 patients had CSF pleocytosis (2.7% [95% confidence interval [CI]: 1.5–4.5]). Three patients had ABM (0.9% [95% CI: 0.2–2.8]). Two had *Streptococcus pneumoniae* in a culture of their cerebrospinal fluid. Among these 2 patients, 1 was nonresponsive during presentation, and the other had a bulging fontanel and apnea. The third child appeared well; however, her blood culture grew *S pneumoniae* and failed the LP test. None of the patients for whom an LP was not attempted subsequently returned to the hospital with a diagnosis of ABM (0% [95% CI: 0, 0.9]).

**CONCLUSION** Few patients who experienced a CFS had ABM in the absence of other signs or symptoms.

**Key Words:** seizure • complex febrile seizure • meningitis • bacterial meningitis • lumbar puncture • consensus statement • fever evaluation

**Abbreviations:** CFS = complex febrile seizure • ABM = acute bacterial meningitis • ED = emergency department • CSF = cerebrospinal fluid • WBC = white blood cell • LP = lumbar puncture • CI = confidence interval

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- (ii) Kurien D, Khandekar LL, Dash S et al. Cyodiagnosis of hydatid disease presenting with Horner's Syndrome A case report. *Acta Cytol* 2001; 45: 74-78.

#### **b) Books and Monograph :**

- (i) Anemia, In: Cotran RS, Kumar V, Collins T. *Robbins Pathologic Basis of Disease*. 6th ed. Singapore. WB Saunders Company, 1999: 1300-1321.
- (ii) Wetzler M, Bloomfield CD. Acute and chronic myloid leukemias . In : *Harrison's Principles of Internal Medicine*. 14<sup>th</sup> ed. Fauci AS, Braunwald E, Isselbacher K, et al, Eds McGraw-Hill, New york, 1998; 684-695.

#### **c) Conferences Proceedings :**

Vivian VL, Editor. Child abuse and neglect; A medical community response. *Proceedings of the First AMA National Conference on child Abuse and Neglect* 1984; Mar 30-31; Chicago: American Medical Association, 1985.