



On Stroke Risk and TIA, Children with Periorbital Swelling, and Suspected Gastroenteritis in Children

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Each month, Dr. Nahum Kovalski reviews a handful of abstracts from, or relevant to, urgent care practices and practitioners. For the full reports, go to the source cited under each title.

Validation of the ABCD² Score for Predicting Stroke Risk After Transient Ischemic Attack

Key point: An ABCD² score >2 is associated with significantly increased risk for stroke within 90 days.

Citation: Tsvigoulis G, Stamboulis E, Sharma VK, et al. Multicenter external validation of the ABCD² score in triaging TIA patients. *Neurology*. 2010;74(17):1351-1357.

The ABCD² score has been endorsed internationally as a simple method for identifying patients with transient ischemic attack (TIA) who are at high risk for early stroke and require admission, yet multiple external validation studies have demonstrated mixed results.

In a multicenter case series study, investigators prospectively applied the score to 148 consecutive patients with TIA at three hospitals in Greece and Singapore.

The seven-point ABCD² score is based on the following:

- Age ≥ 60 =1 point
- Blood pressure at presentation $\geq 140/90$ mm Hg=1 point
- Clinical features: unilateral weakness=2 points; speech disturbance without weakness=1 point
- Duration of symptoms: 10–59 minutes=1 point; ≥ 60 minutes=2 points
- Diabetes mellitus=1 point



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Patients with higher ABCD² scores had significantly higher incidences of stroke at seven days and 90 days. The score accurately predicted high seven-day and 90-day stroke risk (area under the receiver operating characteristic curve, 0.72 and 0.75, respectively).

Patients with scores >2 were five times more likely to suffer stroke at 90 days than those with lower scores.

This study supports the clinical use of the ABCD² score.

[Published in *J Watch Emerg Med*, May 14, 2010—Richard D. Zane, MD, FAAEM.] ■

Evaluation of Children with Periorbital Swelling

Key point: Classic signs of proptosis, ophthalmoplegia, and pain with external ocular movements were absent in 50% of children with orbital infections.

Citation: Rudloe TF, Harper MB, Prabhu SP, et al. Acute periorbital infections: Who needs emergent imaging? *Pediatrics*. 2010;125(4):e719-726.

Rapid diagnosis and treatment of children with orbital abscess can prevent serious sequelae. In a retrospective review of 918 children who presented to an emergency department with periorbital swelling, investigators identified predictors of orbital abscess.

Of 298 children who underwent computed tomography (CT), 111 (12% overall; median age, 7.3 years) had an orbital abscess, and only half of these patients had the three common presenting signs of proptosis, ophthalmoplegia, and pain with external ocular movements.

Children who did not undergo CT were assumed to not have

orbital cellulitis.

Other variables significantly associated with orbital abscess on CT included edema beyond the eyelid, absolute neutrophil count (ANC) 10,000 cells/ μ L, age 3 years, and recent treatment with antibiotics. A recursive partitioning model based on all 918 patients identified edema beyond the eyelid as a strong predictor of orbital abscess.

Among children without the three common presenting signs, 20% of children with edema beyond the eyelid had an orbital abscess vs. 3.5% of those without.

This study would have been improved if all children who presented with periorbital swelling had undergone CT, and if the investigators had prospectively assessed variables associated with orbital abscess. Nonetheless, the results suggest that classic signs, such as proptosis, are absent in a substantial percentage of children with orbital infections. In addition, edema beyond the eyelid seems to be an important sign of orbital cellulitis.

[Published in *Journal Watch Pediatrics and Adolescent Medicine*, May 12, 2010—Howard Bauchner, MD.] ■

Does Ondansetron Mask Alternative Diagnoses in Children with Suspected Gastroenteritis?

Key point: Children who received ondansetron were more likely to return and to be admitted at the return visit but were not more likely to be given alternative diagnoses

Citation: Sturm JJ, Hirsh DA, Schweickert A, et al. Ondansetron use in the pediatric emergency department and effects on hospitalization and return rates: Are we masking alternative diagnoses? *Ann Emerg Med*. 2010;55(5):415-422.

Does use of ondansetron in children with suspected gastroenteritis affect likelihood of admission, return visits, or alternative diagnoses? To find out, investigators conducted a retrospective chart review of 34,117 patients (age range, 3 months to 18 years) who received diagnoses of vomiting or gastroenteritis at two tertiary care pediatric emergency departments over a three-year period. Fifty-eight percent of them received ondansetron.

In logistic regression analyses, patients who received ondansetron were significantly less likely than those who did not receive ondansetron to be admitted on the initial visit, but were significantly *more* likely to return within 72 hours and to be admitted on the return visit. Overall, patients who received ondansetron were significantly less likely to be admitted during the initial or return visit (5.3% vs. 7.3%).

Of 443 patients who returned and were admitted, 17% received alternative diagnoses, most often appendicitis (4%), intussusception (2%), bacteremia (2%), or pyelonephritis (1%). The likelihood of an alternative diagnosis was not associated with ondansetron use, but was significantly associated with documented abdominal pain on the initial visit.

This large study provides convincing evidence that ondansetron does not usually mask alternative diagnoses in children with suspected gastroenteritis. Therefore, physicians should feel comfortable using this effective antiemetic, but continue to consider etiologies of vomiting other than gastroenteritis and provide clear instructions regarding when to return to the ED.

[Published in *J Watch Emerg Med*, May 21, 2010—Katherine Bakes, MD.] ■

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