



ABSTRACTS IN URGENT CARE

- Pediatric Pneumonia
- Signs and Symptoms of Cauda Equina Syndrome
- Removing ‘Stuck’ Rings
- Central vs Peripheral Acute Vertigo

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How Long Should Pediatric Pneumonia Be Treated?

Take-home point: Lower-dose and shorter-duration amoxicillin treatment was noninferior to standard regimens for outpatient treatment of community-acquired pneumonia (CAP) in this trial.

Citation: Bielicki JA, Stöhr W, Barratt S, et al. Effect of amoxicillin dose and treatment duration on the need for antibiotic retreatment in children with community-acquired pneumonia: the CAP-IT randomized clinical trial. *JAMA*. 2021;326(17):1713-1724. Erratum in: *JAMA*. 2021 Dec 7;326(21):2208.

Relevance: CAP is a common reason for antibiotics to be prescribed in children, but the shortest and lowest dose and duration of therapy are not known.

Study summary: This was a multicenter, randomized controlled trial looking at children over 6 months of age diagnosed clinically with CAP and discharged from the ED or hospital on oral antibiotics. Patients were randomized to receive either 35-50 mg/kg/day or 70-90 mg/kg/day for 3 or 7 days. The primary outcome was clinical determination of need for retreatment within 28 days.

A total of 814 children were enrolled. Of the children in the low-dose amoxicillin group, 12.6% required retreatment, vs 12.4% in the higher-dose group. Retreatments were required in 12.5% in both the 3- and 7-day duration-of-treatment groups. Lower dose and shorter duration treatment were both noninferior for the primary outcome. There was no statistically significant difference in symptom severity or duration between the

groups other than a median duration of cough of 12 days for the 3-day treatment group, compared with 10 days for the longer duration group.

Even among patients with more severe CAP, 17.3% of the low-dose patients required retreatment vs 13.5% of the higher dose; the same was true for 16% of the 3-day duration patients vs 14.8% of longer-duration patients.

Editor’s comments: The diagnosis of CAP and need for retreatment were both determined clinically and, therefore, are highly subjective. Because most pediatric CAP is viral in etiology, it is unsurprising in this large RCT that there was no difference in outcomes based on dose and duration of antibiotics. It is important to note that a 3-day course of antibiotics for CAP is not yet the standard of care. Shared decision-making and close follow-up are recommended if implementing this approach. ■

Predicting Cauda Equina Clinically

Take-home point: This study found that bilateral leg pain, loss of bilateral lower extremity reflexes, and dermatomal sensory loss were independently associated with cauda equina syndrome (CES) diagnosed on MRI.

Citation: Angus M, Curtis-Lopez CM, Carrasco R, et al. Determination of potential risk characteristics for cauda equina compression in emergency department patients presenting with atraumatic back pain: a 4-year retrospective cohort analysis within a tertiary referral neurosciences centre [published online ahead of print, 2021 Oct 12]. *Emerg Med J*. 2021;emermed-2020-210540.

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Relevance: CES is a debilitating disorder that can be difficult to diagnose clinically. Understanding the concerning signs and symptoms that warrant further work-up is valuable to the urgent care clinician.

Study summary: This was a retrospective analysis of ED patients presenting with atraumatic back pain. Patients were >18 years of age and had undergone MRI of the lumbar spine due to a clinical suspicion of CES. Radiological compression of the cauda equina was used as the reference standard diagnosis.

Of the 996 patients included, 111 (11%) had radiologic evidence of CES. Patients with CES were more likely to present with bilateral leg pain (OR 2.2), dermatomal sensory loss (OR 1.8), and bilateral absent ankle and/or ankle and knee jerks (OR 2.9). The authors found no relationship between digital rectal examination findings and the ultimate diagnosis of CES.

Editor's comments: This was a single center, retrospective study. However, it's reassuring that rectal exam findings did not correlate with increased risk of CES because this exam can be challenging in patients with severe back pain, especially in urgent care. ■

The Conundrum of Removing Stuck Rings

Take-home point: The use of trauma shears' ring cutting function took significantly less time than the use of a motorized diamond disc ring cutter and demonstrated significantly better satisfaction for both the ring wearer and ring remover.

Citation: Walter J, DeBoer M, Koops J, et al. Quick cuts: A comparative study of two tools for ring tourniquet removal. *Am J Emerg Med.* 2021;46:238-240.

Relevance: Urgent care is the destination of choice for many patients with finger injuries. Removing a ring that is creating a tourniquet effect quickly is a priority for these patients.

Study summary: Emergency medicine providers were enrolled as volunteers and randomized to have rings, either silver or steel, removed using either motorized diamond disc ring cutter (MDDRC) or the ring cutter attachment on trauma shears. Each effort was timed from initiation to removal and the users and subjects rated their satisfaction with the devices and reported any complications.

Thirty subjects completed the study. The median time for ring removal was significantly less with the trauma shears compared with the MDDRC (7.7 vs 67.0 seconds). User satisfaction and participant satisfaction were significantly higher, and participant discomfort significantly lower with the trauma shears.

Editor's comments: This study's results may not be generalizable to patients who are not otherwise healthy volunteers or apply to clinical settings where rings need to be cut (eg, very swollen fingers). Not all trauma shears have a ring cutting function, but it is worth exploring as an alternative to commercial ring cutting devices which are often more difficult to operate. ■

Differentiating Central and Peripheral Causes of Acute Vertigo

Take-home point: The HINTS and STANDING tests were both highly effective in ruling out central causes of vertigo and outperformed the ABCD2 score.

Citation: Gerlier C, Hoarau M, Fels A, et al. Differentiating central from peripheral causes of acute vertigo in an emergency setting with the HINTS, STANDING, and ABCD2 tests: a diagnostic cohort study. *Acad Emerg Med.* 2021;28(12):1368-1378.

Relevance: Acute vertigo can be caused by central nervous system disorders. Given the challenges in getting a rapid MRI of the brain from urgent care, clinical tools that allow providers to exclude central causes of vertigo are highly valuable.

Study summary: This was a single-center, prospective cohort study of emergency room patients with isolated vertigo. Providers were trained to administer the HINTS and STANDING exams within 6 hours of actually performing the tests. Patients then underwent brain MRI after the scores were calculated. The primary outcome was the sensitivity and specificity of each exam for excluding CNS etiologies vertigo.

A total of 300 patients were included in the study and 62 had a central etiology confirmed by imaging—49 of which were acute strokes. Two hundred thirty-eight had a peripheral diagnosis; 40% were benign paroxysmal positional vertigo.

The HINTS exam was found to have a sensitivity 97%/NPV 99% and specificity 67%. The STANDING exam was found to have a sensitivity 94%/NPV 98% and specificity 75%. However, the ABCD2 score performed significantly worse with a sensitivity of only 55%/NPV 87% and a PPV 44%.

Editor's comments: This was a single-center study, but it was also prospective and well designed. The HINTS exam technically requires Frenzel lenses, which are rarely available in UC. This study population had 62 patients (21%) with CNS lesions on MRI causing vertigo, which is a relatively high proportion. This suggests the population may not be representative of an average ED and even less representative of an average UC center. ■