



## ABSTRACTS IN URGENT CARE

- Quinolone Eardrops and Tendon Rupture
- Antibiotics and Sepsis in Neonates
- What Temperature Is Too High in Infants?
- Patient Literacy with Medical Terms
- Screen Time for Concussed Children
- Oseltamivir in Children with Influenza

■ IVAN KOAY, MBChB, FRNZCUC, MD

### Quinolone Eardrops and Achilles Tendon-Related Outcomes

**Take-home point:** Quinolone eardrops were associated with an increased risk of all-type tendon rupture, including Achilles tendon (AT), but not AT tendinitis.

**Citation:** Tran P, Antonelli P, Winterstein A. Quinolone ear drops and Achilles tendon rupture. *Clin Infect Dis.* 2022; ciac709. Epub ahead of print September 6, 2022.

**Relevance:** Systemic quinolones have been known to increase the risk of tendon rupture. Prior studies have shown that otic administration may lead to systemic distribution of quinolones. However, the clinical implications of this have not been fully elucidated.

**Study summary:** This retrospective cohort study evaluated the risk for tendon disorders among adult patients treated with otic quinolones or alternative antibiotics using the MarketScan Commercial Claims Database, which provides medical encounter and outpatient pharmacy dispensing details for privately insured patients in the U.S. To minimize confounding, negative control outcomes including sports injuries and clavicle fractures were used.

The authors evaluated more than 1.5 million episodes of otic antibiotic administration. In the quinolone group, they found 6.17 cases of AT rupture per 100,000 episodes, 34.9 cases of Achilles tendinitis per 100,000 episodes, and 37.15 cases of all-type tendon rupture per 100,000 episodes. In the control group, there were 1.86, 31.3, and 22.12 cases per 100,000 episode, respectively. Hazard ratios for otic quinolone exposure were statistically significant for AT rupture (HR, 4.49; 95% CI, 1.83–11.02) and all-

type tendon rupture (HR, 1.71; 95% CI, 1.21–12.41), but not for Achilles tendinitis (HR, 1.04; 95% CI, 0.73–1.50).

**Editor's comments:** The study was retrospective in design and data were reliant on the assumption of accuracy of adjudicated claims and correct diagnosis coding. The outcomes of interest were rare, but given use of reasonable controls and statistically significant HRs for tendon rupture, increased caution with otic suspensions of quinolones is warranted. Further studies evaluating for any association of additional adverse effects associated with systemic quinolones and otic and/or ophthalmic administration are important for patient safety. ■

### Neonatal Exposure to Antibiotics and Early-Onset Sepsis

**Take-home point:** Antibiotic exposure during the first week of life is disproportionate compared with the burden of early-onset sepsis (EOS), and wide variations in practice exist internationally.

**Citation:** Giannoni E, Dimopoulou V, Klingenberg C, et al. Analysis of antibiotic exposure and early-onset neonatal sepsis in Europe, North America, and Australia. *JAMA Netw Open.* 2022;5(11): e2243691.

**Relevance:** UC providers are responsible for antibiotic stewardship. While neonates do not present to UC frequently, it is important for providers to be familiar with changing practice recommendations for this vulnerable population.

**Study summary:** This was an international, cross-sectional, retrospective study investigating exposure to intravenous antibiotics in the first postnatal week in late-preterm and full-term neonates. Data were extracted from electronic health records, clinical information systems, databases of microbiology laboratories, and regional and national databases by investigators. The primary objective was to quantify antibiotic exposure, incidence of EOS, and mortality.



**Ivan Koay, MBChB, FRNZCUC, MD** is an urgent care physician; Medical Lead Ealing Urgent Care Center, London, UK; RNZCUC Examiner; and Head of Faculty na hÉireann Royal New Zealand College of Urgent Care.

The authors included more than 750,000 neonates, of whom 21,703 (2.86%) were started on intravenous antibiotics within the first postnatal week. The median (IQR) duration of antibiotic therapy was 4 (3-6) days for all newborns treated with antibiotics, 9 (7-14) days for those with EOS, and 4 (3-6) days for those without proven EOS. EOS was diagnosed in 375 neonates, leading to an incidence of 0.49 cases per 1,000 live births (95% CI, 0.45-0.55 cases per 1,000 live births). The number of deaths for all live births was 622, leading to an all-cause mortality rate of 0.82 per 1,000 live births (95% CI, 0.76-0.89 per 1000 live births). Fifty-eight neonates were treated with antibiotics for each single confirmed case of EOS. The overall mortality of EOS was 3.2%.

**Editor's comments:** This study was limited by retrospective design and varied data sources. However, it is clear that neonatal sepsis is rare, and mortality is even more uncommon. Despite these findings, the role of the UC provider is likely to be unchanged by this study in terms of disposition/emergency department referrals. We can educate families, however, to ask questions about the necessity of invasive testing, admission, and intravenous antibiotics. ■

#### How Hot is Too Hot for Infants with Fever?

**Take-home point:** Infants with temperatures lower than 38.2°C were significantly less likely to have a serious infection than those with higher temperatures. However, using this cutoff as an absolute criterion could result in missing serious infections.

**Citation:** Lam S, Chamdawala H, Friedman J, et al. A comparison of temperature thresholds to begin laboratory evaluation of well-appearing febrile infants. *Pediatr Emer Care*. 2022;38:628-632.

**Relevance:** In 2021, the American Academy of Pediatrics (AAP) published new clinical practice guidelines regarding evaluation of well-appearing febrile infants <60 days of age with a temperature threshold of 38.0°C (revised from the previous cutoff of 38.2°C). This paper looks at the practical significance of investigations of children at the lower threshold.

**Study summary:** This was a retrospective review of the dataset of the Application of Transcriptional Signatures for Diagnosis of Febrile Infants Within the Pediatric Emergency Care Applied Research Network (PECARN). The aim of the study was to determine the frequency of infants <60 days of age who subsequently are found to have serious infections after presenting to the ED with a temperature of 38.0°C or 38.1°C and to describe the characteristics of those infants compared with those with higher tempera-

tures. Serious infections were characterized as urinary tract infection (UTI), bacteremia, bacterial or herpes meningitis, bacterial pneumonia, or bacterial enteritis. The dataset used the Yale Observation Score (YOS) to objectively evaluate the clinical appearance of patients.

The authors identified 4,619 infants with a YOS of 10 or lower with 28.4% having rectal temperatures of either 38.0°C or 38.1°C. The probability of serious infection was not negligible for infants with temperatures 38.0°C or 38.1°C. Among those infants tested with at least one rectal temperature >38.2°C, 5.8% had a UTI, 0.8% had bacteremia, 0.4% had bacterial meningitis, 2.9% had herpes meningitis, 4.5% had pneumonia, and 4.8% had bacterial enteritis. Infants with low-grade temperatures were significantly less likely to have a UTI vs those with higher temperatures (relative risk (RR) = 0.62; 95% CI, 0.48-0.80) or bacteremia (RR=0.50; 95% CI, 0.25-0.97). There were no significant differences between those with lower or higher temperatures ( $\geq 38.2^\circ\text{C}$ ) in the probability of bacterial meningitis, herpes meningitis, lobar pneumonia, or bacterial enteritis.

**Editor's comments:** Twenty-eight percent of patients were excluded from the study due to the lack of YOS scores. A fever was defined by a rectal temperature, and peripheral temperature measurements were not evaluated. There was a proportion of patients admitted to the study based on temperatures acquired at home per caregiver reports. To corroborate findings from the prior study, serious infections in the neonatal and young infant populations are rare, but the data do not suggest that lower-grade fevers can adequately exclude serious infection. ■

#### Do Patients Understand the Meaning of Medical Terms?

**Take-home point:** Common phrases are frequently misunderstood, and often interpreted to mean the opposite of what is intended.

**Citation:** Gotlieb R, Praska C, Hendrickson M, et al. Accuracy in patient understanding of common medical phrases. *JAMA Netw Open*. 2022;5(11):e2242972.

**Relevance:** Medical jargon is commonly used in clinical practice. It is important to consider how patients understand messaging when technical language is used.

**Study summary:** This was a cross-sectional study of the members of the general public interviewed while attending the Minnesota State Fair. A 13-question survey with a mix of open-ended and multiple-choice questions assessing understanding of common medical jargon was used. Multiple-choice responses were coded as correct or incorrect.

Free-text responses were coded for accuracy by two independent researchers, with a third researcher used as an arbiter in cases of disagreement.

The authors enrolled 215 volunteers who completed the survey (116 written, 99 verbal). There was mixed understanding of which phrases were meant to convey good news vs bad news. Some examples were that only 9% knew what “febrile” meant and only 2% of respondents understood the phrase “occult infection.” Increasing age was associated with increased understanding of “nothing by mouth” and “negative blood cultures” but decreased understanding of the term “impressive” in the context of radiography findings. The use of terms that mean something different in common usage than in a medical context, or *medicalized English*, was a frequent cause of confusion.

**Editor’s comments:** There was an element of selection bias, as participants enrolled were those that visited the university research building based in the fair, and a high proportion had attained higher education. Regardless, the study highlights how common expressions in medicine may have converse meanings in popular vernacular. ■

### Restricting Screen Time for Concussed Children

**Take-home point:** Moderation in screen time may be helpful in facilitating recovery for children with concussion.

**Citation:** Cairncross M, Yeates K, Tang K, et al. Early post-injury screen time and concussion recovery. *Pediatrics*. 2022 Nov 1;150(5): e2022056835.

**Relevance:** Treatment and management of concussed patients has evolved in recent years, with newer data suggesting different approaches to the effects of exercise and screen time.

**Study summary:** This was a prospective, longitudinal, cohort study of pediatric patients who had sustained a concussion or orthopedic injury (OI), as a control population. Participants were recruited from five emergency departments within the Pediatric Emergency Research Canada. The Health and Behavior Inventory (HBI), was used as the primary outcome and the Healthy Lifestyle Behaviors Questionnaire (HLBQ) assessed parent-proxy and self-reported pre- and postinjury engagement in health behaviors, including physical activity and rest, cognitive activity and rest, diet, sleep, and screen time.

The authors recruited 633 participants and found the interaction between screen time and group was significant for parent-reported somatic symptoms or self-reported cognitive symptoms. The relationship between screen time

and group differences in postconcussion symptoms was not linear. Both lower and higher screen time was associated with more severe symptoms in the concussion group relative to the OI group.

**Editor’s comments:** The authors did not assess the timing, nature, or quality of screen time. Discrepancies between parental and self-reporting could not be verified by the authors. The relationship between screen time and concussion recovery appears complex, however, and this study does not support admonishment of all screen time. ■

### Early Use of Oseltamivir in Children with Influenza

**Take-home point:** Early use of oseltamivir in hospitalized children was associated with shorter hospital stay and lower odds of 7-day readmission, ICU transfer, ECMO use, and death.

**Citation:** Walsh P, Schnadower D, Zhang Y, et al. Association of early oseltamivir with improved outcomes in hospitalized children with influenza, 2007-2020. *JAMA Pediatr*. 2022;176(11):e223261.

**Relevance:** Oseltamivir has been recommended for use in children with influenza by both the American Academy of Pediatrics and the Infectious Diseases Society of America, based on the results from treating outpatient adults. Data regarding its use in children have been limited.

**Study summary:** This was a multicenter, retrospective cohort study of children admitted to the hospital with influenza using the Pediatric Health Information System (PHIS) from 50 U.S. tertiary care pediatric hospitals. Primary exposure for the study was the early use of oseltamivir, while primary outcome was length of stay in hospital.

The authors identified 55,799 cases for analysis; 33,207 (59.5%) received early oseltamivir, defined as administration on hospital day 0 or 1. Children treated with early oseltamivir had significantly lower median LOS (3 vs 4 days), 7-day readmissions (3.5% vs 4.8%), late ICU transfer (2.4% vs 5.4%), and in-hospital mortality or ECMO use (0.9% vs 1.3%) compared with children not treated with early oseltamivir. Meta-analyses of outpatient treatment did not show a reduction in symptoms among patients with asthma.

**Editor’s comments:** This study was restricted to outcomes among hospitalized patients. It remains unclear to what extent early oseltamivir affects clinical outcomes among pediatric outpatients with influenza. Shared decision-making regarding its use in children presenting to urgent care is likely the most clinically sound approach. ■