

August 09, 2023 1 min read

Accelerated severity of illness score may enhance predictions for pediatric osteomyelitis

Key takeaways:

- Researchers found accelerated severity of illness score may provide an enhanced predictive model for pediatric osteomyelitis.
- Immediate severity of illness score also showed high reliability.

Accelerated severity of illness score may provide an enhanced predictive model for cases of complicated osteomyelitis in children, according to data presented at the Musculoskeletal Infection Society Annual Meeting.

“The accelerated severity of illness score has resolved a number of model weaknesses and exhibits unparalleled sensitivity and specificity reported as the AUC,” Norman A. Lapin, PhD, said in his presentation.



Accelerated severity of illness score may provide an enhanced predictive model for cases of complicated osteomyelitis in children. *Image: Adobe Stock*

In a retrospective cohort study, Lapin and colleagues evaluated 439 children diagnosed with culture-positive *Staphylococcus aureus* acute hematogenous osteomyelitis (AHO) to determine how soon it is possible to identify severe AHO and predict complicated outcomes.



**Norman A.
Lapin**

“In order to objectively define the outcome variable, we took the adverse event (AE) as our basic unit of adverse outcome,” Lapin said.

He continued, “From this, we could construct what we call the adverse event index (AEI), equal to the number of minor AEs plus the number of major AEs times a weight factor. It is that AEI at a specific cutoff value that would be defined as complicated osteomyelitis.”

Researchers found 52 children met the defined cutoff parameters for complicated osteomyelitis. For severity of illness, Lapin said the following scoring models were developed: immediate severity of illness score, accelerated severity of illness score and comprehensive severity of illness score. The immediate score included variables that were available within 6 hours of triage, the accelerated score included variables available within 48 hours of triage and the comprehensive score included variables available later than 48 hours after triage.

Following ROC analysis, results showed accelerated severity of illness score was not associated with a statistically significant difference from the comprehensive severity of illness score, according to Lapin.

Lapin said accelerated severity of illness score was associated with a fourfold to 12-fold increase in dynamic range, as well as the lowest ceiling effect compared with the other models.

In addition, Lapin said that after classifying severity of illness by ROC cutoffs, including mild, moderate, severe and hyper-severe categories, researchers found the hyper-severe classification was associated with an increased risk of complicated osteomyelitis at approximately 80% of cases.

“Multiple metrics indicate that both scores, the accelerated severity of illness score and its component immediate severity of illness score, have high reliability,” Lapin said.

Editor’s Note: This article was updated on August 11, 2023 to more accurately reflect the study’s methodology.

Read more about

[osteomyelitis](#)[pediatric disorders](#)

May 28, 2022 1 min read

BoneSupport receives FDA market authorization for antibiotic-eluting bone graft

BoneSupport has announced FDA market authorization of the Cerament G bone graft for patients with osteomyelitis, according to

[CONTINUE READING](#)