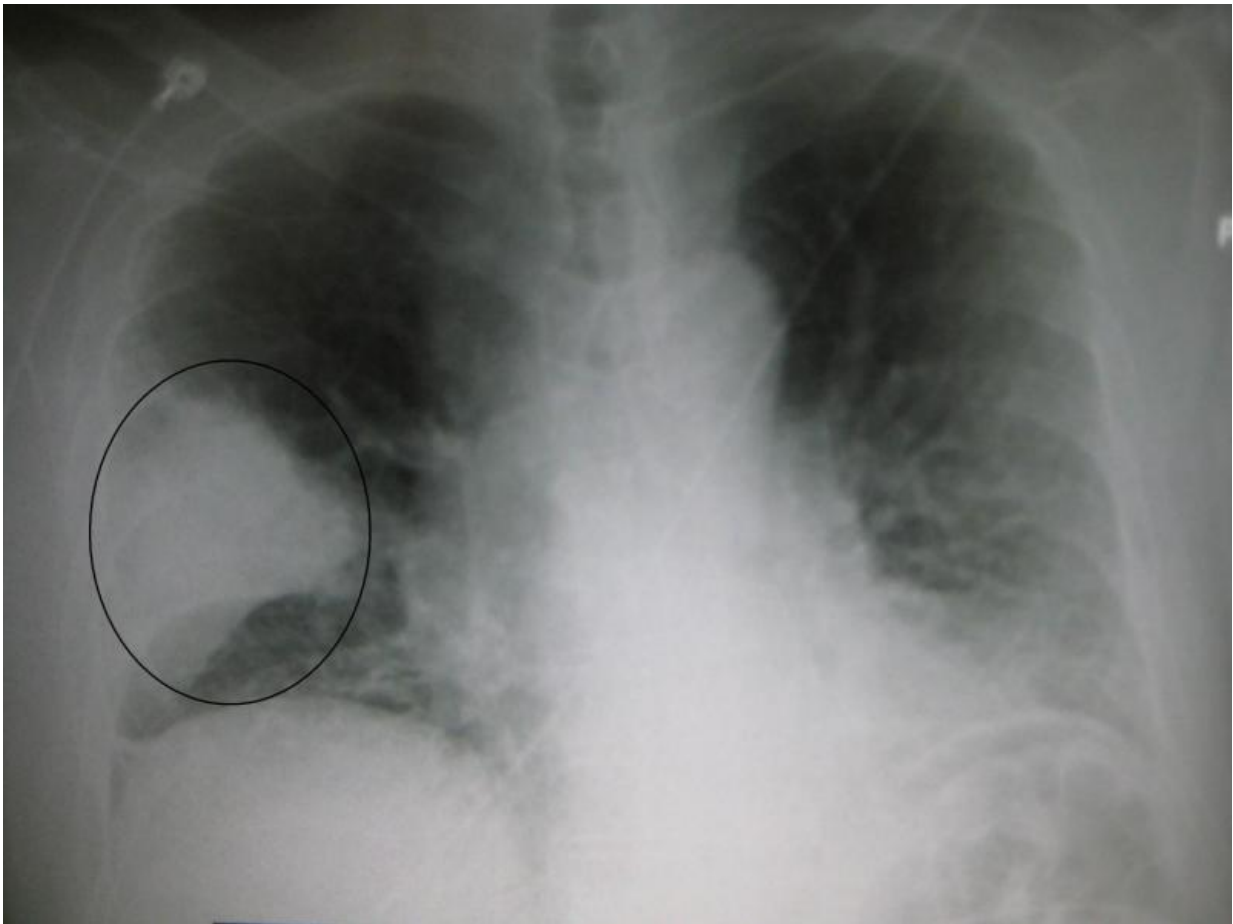


Indicators of infection response do not predict severity of pneumonia in children

May 13 2020



A black and white X-ray picture showing a triangular white area on the left side. A circle highlights the area. Credit: James Heilman, MD./Wikipedia

Blood biomarkers that reflect the body's response to infection—including white blood cell count, absolute neutrophil count, C-reactive protein (CRP) and procalcitonin—are generally not useful in predicting the overall severity of community-acquired pneumonia in children, according to a study published in *Pediatrics*. However, CRP and procalcitonin, both of which have been associated with severe disease in adults, may be useful in identifying the most severe outcomes in children with community-acquired pneumonia.

"Accurate assessment of disease severity is essential to clinical decision-making, and currently there are no validated prognostic tools to assist with this determination for children with community-acquired pneumonia," says lead author Todd Florin, MD, MSCE, pediatric emergency medicine physician at Ann & Robert H. Lurie Children's Hospital of Chicago and Associate Professor of Pediatrics at Northwestern University Feinberg School of Medicine. "While in our study we found that conventionally measured biomarkers do not generally predict illness severity, CRP and procalcitonin may be helpful in ruling out the most severe outcomes of community-acquired pneumonia in children."

Dr. Florin and colleagues evaluated 477 children, ages 3 months to 18 years, who presented to the [emergency department](#) with signs and symptoms of lower respiratory tract infection. Researchers examined the predictive value of biomarkers in relation to complications of community-acquired pneumonia, as well as more common indicators of disease severity and requirements for hospitalization, such as use of intravenous fluids, [supplemental oxygen](#), positive pressure ventilation and broadening of antibiotics.

"In our study we looked at community-acquired pneumonia severity more broadly than most previous studies, focusing on both interventions and diagnoses that required hospitalization," says Dr. Florin. "Although

not associated with the full spectrum of disease severity, we found elevated CRP and procalcitonin levels in children with complicated [pneumonia](#), empyema requiring chest drainage, positive-pressure ventilation, sepsis and receipt of vasoactive infusions. However, we saw only a small number of [children](#) with these severe outcomes, so cannot make definitive conclusions. More research is needed to validate our findings."

Provided by Ann & Robert H. Lurie Children's Hospital of Chicago

Citation: Indicators of infection response do not predict severity of pneumonia in children (2020, May 13) retrieved 4 May 2024 from <https://medicalxpress.com/news/2020-05-indicators-infection-response-severity-pneumonia.html>

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