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Procalcitonin as an Early Marker of the Need for Invasive Respiratory or Vasopressor Support in Adults with Community-Acquired Pneumonia.

Self WH et al Chest; 2016 Oct; 150(4):819-828.

Question

Can Procalcitonin levels help predict need for more invasive treatments in patients with CAP.

Background

Procalcitonin levels that are elevated above 2 ng/ml have been associated with severe bacterial infections such as pneumonia, meningitis, peritonitis as well as severe noninfectious inflammatory conditions such as burns, trauma, organ failure and major surgery.

Methods

Serum procalcitonin (PCT) concentration levels were measured with the need for invasive respiratory or vasopressor support (IRVS) within 72 h of patients admitted for CAP. A multicenter prospective cohort study of 1770 adults. Results reported as the estimated risk of IRVS for a given PCT concentration.

Results

PCT concentration had a strong association with IRVS risk. PCT (< 0.05 ng/mL) was associated with a 4% risk of IRVS. For concentrations < 10 ng/mL, PCT had an approximate linear association with IRVS risk (1-2% per ng increase). With a PCT concentration of 10 ng/mL, the risk of IRVS was 22.4% and remained relatively constant for all concentrations > 10 ng/mL. When added to each pneumonia severity score, PCT contributed significant additional risk information for the prediction of IRVS.

Bottom Line

Serum PCT concentration was strongly associated with the risk of requiring IRVS among adults hospitalized with CAP and is potentially useful for guiding decisions about ICU admission.