Prospective validation of the RAPID clinical risk prediction score in adult patients with pleural infection: the PILOT study


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This multicentre observational study shows that RAPID score can stratify adults with pleural infection into categories according to increasing risk of 3-month mortality and should inform future research directed at improving outcomes in this population. https://bit.ly/37tk2LN

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ABSTRACT

Background: Over 30% of adult patients with pleural infection either die and/or require surgery. There is no robust means of predicting at baseline presentation which patients will suffer a poor clinical outcome. A validated risk prediction score would allow early identification of high-risk patients, potentially directing more aggressive treatment thereafter.

Objectives: To prospectively assess a previously described risk score (the RAPID (Renal (urea), Age, fluid Purulence, Infection source, Dietary (albumin)) score) in adults with pleural infection.

Methods: Prospective observational cohort study that recruited patients undergoing treatment for pleural infection. RAPID score and risk category were calculated at baseline presentation. The primary outcome was mortality at 3 months; secondary outcomes were mortality at 12 months, length of hospital stay, need for thoracic surgery, failure of medical treatment and lung function at 3 months.

Results: Mortality data were available in 542 out of 546 patients recruited (99.3%). Overall mortality was 10% at 3 months (54 out of 542) and 19% at 12 months (102 out of 542). The RAPID risk category predicted mortality at 3 months. Low-risk mortality (RAPID score 0–2): five out of 222 (2.3%, 95% CI 0.9 to 5.7%); medium-risk mortality (RAPID score 3–4): 21 out of 228 (9.2%, 95% CI 6.0 to 13.7%); and high-risk mortality (RAPID score 5–7): 27 out of 92 (29.3%, 95% CI 21.0 to 39.2%). C-statistics for the scores at 3 months and 12 months were 0.78 (95% CI 0.71–0.83) and 0.77 (95% CI 0.72–0.82), respectively.

Conclusions: The RAPID score stratifies adults with pleural infection according to increasing risk of mortality and should inform future research directed at improving outcomes in this patient population.

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