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Performance of clinical prediction rules for diagnosis of pleural tuberculosis in a high-incidence setting(Article)

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Abstract View references (40)

Objectives: Diagnosis of pleural tuberculosis (PT) is still a challenge, particularly in resource-constrained settings. Alternative diagnostic tools are needed. We aimed at evaluating the utility of Clinical Prediction Rules (CPRs) for diagnosis of pleural tuberculosis in Peru. Methods: We identified CPRs for diagnosis of PT through a structured literature search. CPRs using high-complexity tests, as defined by the FDA, were excluded. We applied the identified CPRs to patients with pleural exudates attending two third-level hospitals in Lima, Peru, a setting with high incidence of tuberculosis. Besides pleural fluid analysis, patients underwent closed pleural biopsy for reaching a final diagnosis through combining microbiological and histopathological criteria. We evaluated the performance of the CPRs against this composite reference standard using classic indicators of diagnostic test validity. Results: We found 15 eligible CPRs, of which 12 could be validated. Most included ADA, age, lymphocyte proportion and protein in pleural fluid as predictive findings. A total of 259 patients were included for their validation, of which 176 (67%) had PT and 50 (19%) malignant pleural effusion. The overall accuracy of the CPRs varied from 41% to 86%. Two had a positive likelihood ratio (LR) above 10, but none a negative LR below 0.1. ADA alone at a cut-off of ≥40 IU attained 87% diagnostic accuracy and had a positive LR of 6.6 and a negative LR of 0.2. Conclusion: Many CPRs for PT are available. In addition to ADA alone, none of them contributes significantly to diagnosis of PT.

Author keywords

- adenosine deaminase activity
- Mycobacterium tuberculosis
- pleural tuberculosis score

Indexed keywords

GEOBASE Subject Index:	agecells and cell componentschemical analysisdetection methoddisease inci reviewperformance assessmentpredictionproteintesting methodtuberculosis
EMTREE medical terms:	ArticleClinical Prediction Rulesdiagnostic accuracydiagnostic procedurediag valuehistopathologyhumanincidencemalignant pleura effusionMycobacteriu fluidpredictive valuesystematic reviewtuberculous pleurisyvalidation studyd imagingechographyenzyme assayenzymologyisolation and purificationmicr biopsypleura effusionproceduresputumthoracocentesisthorax radiographyT
Regional Index:	Lima [Peru]Peru
Species Index:	Mycobacterium tuberculosis
EMTREE drug terms:	adenosine deaminasebiological marker
MeSH:	Adenosine DeaminaseBiomarkersBiopsy, NeedleClinical Enzyme TestsDec TechniquesHumansIncidenceMycobacteriumPeruPleural EffusionPredictive ThoracicSputumThoracentesisTuberculosis, PleuralUltrasonography

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adenosine deaminase, 9026-93-1;

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