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**Title:** Iterative therapeutic thoracocentesis as the first-line treatment of complicated parapneumonic effusion: An observational study of 79 consecutive cases

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**Body:** Background: The optimal management of complicated parapneumonic effusions (CPE) remains controversial. Objectives: To assess the safety and efficacy of iterative therapeutic thoracocentesis (ITTC), the first line treatment of CPE in our institution. Methods: Patients with CPE were identified through our computerized database. We retrospectively studied all cases of CPE initially managed with ITTC in our institution during years 2001-2010. ITTC failure was defined by the need for additional strategy for cure (i.e. surgery or percutaneous drainage), persistence of clinical or radiological signs of CPE or death. Results: Seventy-nine consecutive patients were evaluated. The one year survival rate was 88%. The success rate was 81% (n=64). Only 3 patients (4%) were referred to thoracic surgery. On multivariate analysis, identification of gram-positive bacteria in pleural fluid and the first thoracentesis  $\geq 450$  mL were associated with ITTC failure with adjusted odds-ratios of 7.65 [CI95%=1.44-40.67] and 6.97 [1.86-26.07], respectively. The main complications of ITTC were blank thoracentesis (n=23, 29%), iatrogenic pneumothorax (n=5, 6%) and vasovagal reactions (n=3, 4%). No pneumothorax required chest tube drainage. No hemothorax or re-expansion pulmonary edema was observed. Conclusions: Although not indicated in international recommendations, ITTC is safe and effective as the first-line treatment of CPE, with limited invasiveness as compared to current alternatives.