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Title: Do pre-analytical or analytical factors influence the performance of real time PCR tests in the diagnosis of tuberculosis?

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Body: Purpose: The tests used for nucleic acid amplification of Mycobacterium tuberculosis have sensitivity ranging from 11 to 81% in samples of pleural fluid (PF), sputum or bronchoalveolar lavage (BAL). The lowest sensitivities are observed in paucibacillary samples and in samples with pre analytical interferents. The objective of this study is to evaluate whether pre analytical variables influence the diagnostic of tuberculosis by real-time PCR in samples of PF and BAL. Methods: From a pleural transudate sample we simulated a PF sample rich in proteins (>4,5 g/dL), cells (>10.000/mm^3) and eritrocytes (>50.000/mm^3) and inoculated M. tuberculosis in concentration ranging from $1,5 \times 10^6$ to $1,5 \times 10^1$ CFU/mL. From a non-inflamatory BAL sample we simulated BAL samples with increasing grades of hemorrhage. All the samples were prepared in triplicate. Two extraction (Qiagen and Roche) and detection (Roche and Nanogen) techniques were used for the Real time PCR.

Conclusions: The choice of the extraction/detection methods seems to be more important than samples interferents in the detection of M. tuberculosis in paucibacillary PF and BAL samples.