NEUTROPHIL GELATINASE-ASSOCIATED LIPOCALIN (NGAL) IN PD-ASSOCIATED PERITONITIS: COMPARISON BETWEEN TWO METHODS

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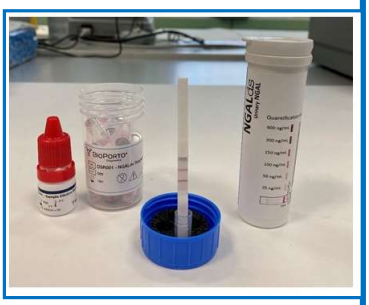
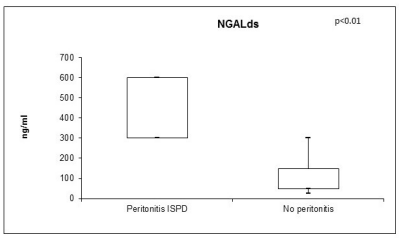
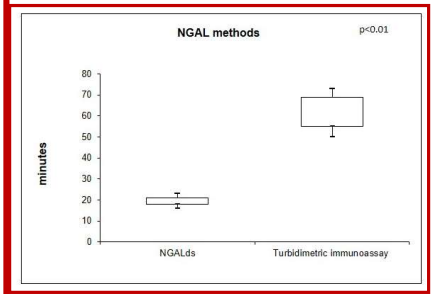
Background: Peritonitis is a frequent complication for peritoneal dialysis (PD) patients and it is still the main cause of morbidity and mortality in this population. Neutrophil gelatinase-associated lipocalin (NGAL) is a lipocalin involved in the immune response and is significantly high in the peritoneal dialytic effluent (PDE) of peritoneal dialysis (PD) patients with peritonitis. The focus of this study is to match two different techniques for peritoneal NGAL evaluation: NGAL point-of-care test- POCT (NGAL Dipstick – NGALds) *versus* the laboratory-based NGAL assay and with white cells count in PDE.



Methods: In this study, we included 30 PD patients: 17 with peritonitis and 13 without. Peritoneal NGAL was tested by a turbidimetric immunoassay and by NGALds. Peritoneal NGAL was measured by laboratory-based test using article-enhanced turbidimetric immunoassay for the quantitative determination and by the novel POCT, NGALds, a rapid assay for semi-quantitative evaluation of NGAL levels in peritoneal effluent by colorimetric strips.

Results: We noticed a good positive linear correlation between POCT results and laboratory-based test (Spearman's rho= 0.88, p<0.01) and between peritoneal NGALds and white cell count in PDE (Spearman's rho= 0.82, p<0.01). NGALds values resulted elevated in patients with peritonitis (300 ng/ml, IQR 300-600) in comparison to patients without (100ng/ml, IQR 50-150) (p<0.01). Furthermore, the NGALds test was performed in a median time of 20 minutes (IQR 18- 21) in comparison with the median time of 65 minutes (IQR 55-69) necessary for the laboratory-based test (p<0.01).





Conclusions: The results of NGALds were coherent with the laboratory-based NGAL and with white cell count in PDE; furthermore, it was a user-friendly method with real-time findings. NGALds could be an extra tool for the diagnosis of peritonitis, helpful at the bedside of the patient if the laboratory-based NGAL test is not accessible and shortening the length of diagnosis.

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