

# Neutrophil gelatinase-associated lipocalin NGAL

## Dipstick test in Peritoneal Dialysis patients with peritonitis

Matteo Marcello b,c, Sabrina Milan Manani a,b, Grazia Maria Virzi a,b, Davide Marturano b,d, Ilaria Tantillo a,b, Valentina Corradi a,b, Massimo De Cal a,b, Francesca Martino a,b, Anna Giuliani, a,b, Davide Giavarina f and Claudio Ronco a,b,d

a Department of Nephrology, Dialysis and Transplant, St Bortolo Hospital, Vicenza, Italy; b IRRIV- International Renal Research Institute, Vicenza, Italy; c Libera Università Vita Salute San Raffaele, Milano, Italy; d DIMED, University of Padova, Padova, Italy; f Department of Clinical Chemistry and Hematology Laboratory, San Bortolo Hospital, Vicenza, Italy

### INTRODUCTION

Neutrophil gelatinase-associated lipocalin (NGAL) is a lipocalin that plays a role against pathogens.

NGAL is elevated in the peritoneal dialytic effluent (PDE) of peritoneal dialysis (PD) patients with peritonitis.

The aim of this study is to compare a novel peritoneal NGAL point-of-care test (POCT) with the laboratory-based NGAL test and with white cell count in PDE.

### METHODS

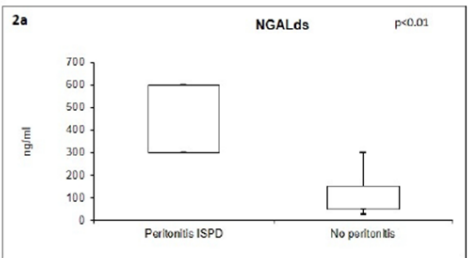
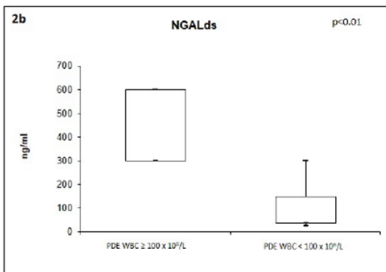
We enrolled 17 PD patients with peritonitis and 13 without. Peritoneal laboratory-based NGAL was measured using a particle-enhanced turbidimetric immunoassay.

Peritoneal NGAL was also evaluated using the POCT, a semi-quantitative assessment of NGAL in biological liquids using colorimetric test strips (NGAL Dipstick – NGALds).

### RESULTS

We observed a positive linear correlation between peritoneal NGALds and the peritoneal laboratory-based NGAL and between peritoneal NGALds and white cell count in PDE (all  $p < 0.01$ ).

Peritoneal NGALds levels were higher in patients with peritonitis compared with patients without ( $p < 0.01$ ).



Peritoneal NGALds values in PD patients divided by peritoneal white cell count

Peritoneal NGALds values in patients with and without peritonitis

### CONCLUSION

Peritoneal NGALds was consistent with the peritoneal laboratory-based NGAL and with white cell count in PDE. In conclusion, it is an user-friendly test that provides timely results, useful in particular at the point of care.

### BIBLIOGRAPHY

- Martino F, Filippi I, Giavarina D, Amici G, de Cal M, Kaushik M, Rodighiero MP, Crepaldi C, Ronco C (2013) Neutrophil gelatinase-associated lipocalin in peritoneal effluent: evaluation in peritoneal dialysis patients in basal condition. *Peritoneal dialysis international* : journal of the International Society for Peritoneal Dialysis 33 (4):379-381.
- Virzi GM, Clementi A, de Cal M, Cruz DN, Ronco C (2013) Genomics and biological activity of neutrophil gelatinase-associated lipocalin in several clinical settings. *Blood purification* 35 (1-3):139-143.