Anti–Phospholipase A_2 Receptor antibodies in the diagnosis of idiopathic Membranous Nephropathy

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Introduction and objectives

- The Phospholipase A_2 Receptor was identified as autoantigen in the idiopathic membranous nephropathy (iMN).
- Circulating anti-phospholipase A_2 receptor antibodies (anti-PLA_2R) has been described in 70% to 80% of the patients with iMN [1] but not in patients with secondary membranous nephropathy or other glomerular diseases.
- The goal of this study was to evaluate the sensitivity and specificity of the assay for anti-PLA_2R in the diagnosis of iMN.

Population and methods

- Anti-PLA_2R IgG, Elisa and immunofluorescence test were used to detect circulating anti-PLA_2R.
- This test was applied to 53 patients who had already been submitted to a kidney biopsy between November 2011 and May 2013.

Membranous Nephropathy (MN) **n=38**	Idiopathic MN (iMN) **n=33**
	Secondary MN (sMN) **n=5**
Other Glomerular Diseases (other GD) **n=15**	

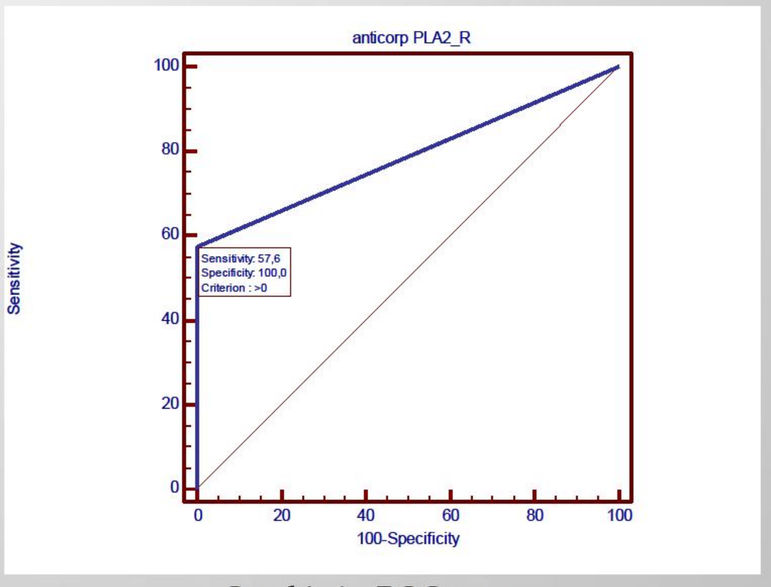
- ROC curve was used to determine the sensitivity and specificity of the assay.

Results

- Anti-PLA_2R was only positive in patients with iMN.

	iMN	sMN	other GD
Anti-PLA2R +	19	0	0
Anti-PLA2R -	14	5	15

- The sensitivity was 57,6% (CI 39,2-74,5) and specificity 100% (CI 47,8-100), AUC 0,788; P<0,0001 for the detection of iMN.
- 71,4% (n=10) of the 14 iMN patients that tested negative for anti-PLA_2R were in partial or complete remission.



Graphic 1 – ROC curve

- Anti-PLA_2R became negative in 2 patients with iMN after treatment with cyclosporine.
- Anti-PLA_2R became positive in 1 patient with relapse.

Conclusion

- The detection of anti-PLA_2R in the studied population had a specificity of 100% for the iMN diagnosis. Successful prior treatment can contribute to the low sensitivity (57,6%).
- The usefulness of this assay as a marker of treatment response should be evaluated.

References

1 . Hanna Debiec, Pierre Ronco, "PLA_2R autoantibodies and PLA_2R glomerular deposits in membranous nephropathy" NEJM, February 2011, 689-690.
2 . Stanescu et all, "Risk HLA-DQA1 and PLA2R1 alleles in Idiopathic membranous nephropathy", NEJM, February 2011, 616-626.

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