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Anti-proteinase 3 antibodies: A potential serological marker of ulcerative colitis in a north African population

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Introduction

- Anti-neutrophil cytoplasm antibodies (ANCA) directed against proteinase 3 (PR3) → A useful diagnostic tool for small vessel vasculitis.
- Beyond systemic vasculitis : Emergence of new uses of ANCA (1).
- One of these uses : anti-PR3 **measured by ELISA or chemiluminescent immunoassays** → As a marker of inflammatory bowel disease namely ulcerative colitis (1) (2).

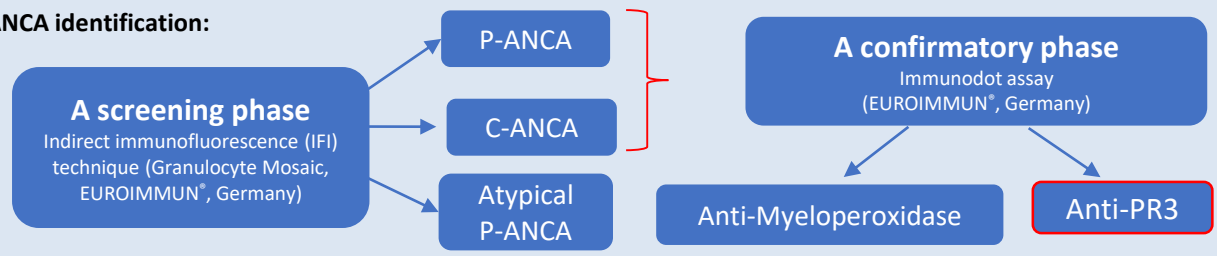
Objective : to Investigate the usefulness of anti-PR3 Abs in differentiating UC from Crohn's disease (CD) in a Tunisian population using an Immunodot assay.

Patients and methods

- A 9-year (2014-2022) **observational comparative study** comparing 2 groups admitted in the gastroenterology department:
  - Group 1 : Patients positive for ANCA anti-PR3 antibodies with available clinical records during 2014-2022.
  - Group 2 : Patients negative for ANCA with available clinical records in 2022.

-***Anti-Saccharomyces cerevisiae* antibodies (ASCA)** : By ELISA (EUROIMMUN®, Germany).

- **ANCA identification:**



Results

	Group 1 (N=40) (16 p-ANCA and 24 c-ANCA)	Group 2 (N=37)	P value
IBD	37	24	0.002
Crohn's disease (CD)	7	17	0.01
UC	26	6	<0.001
Inclassified colitis	4	1	0.36
Other diagnoses	Heavy chain disease,indetermined colitis and infectious diarrhea	Hepatobiliary disease (n=7), diarrhea (n=6)	0.5
ASCA positivity	4/36	5/31	0.72

Selection of CD+UC patients

	Group 1 (N=33)	Group 2 (N=23)	P value
CD	7	17	0.0001
UC	26	6	
ASCA positivity	4/31	4/21	0.69

- In the PR-3 positive group, UC diagnosis did not statistically differ between the p-ANCA and c-ANCA subgroups (p=0.39).
- In the UC- PR-3 positive patients: 13 had a pancolitis disease extension and 5 were resistant to corticosteroids.

Discussion

.-Our results : anti-PR3 antibodies are associated with IBD more specifically with UC.

→ In accordance with emergent literature showing such an association using ELISA and chemiluminescent immunoassays in other populations (2) (3) .

-Other studies have found an association between anti-PR3 levels with disease extension in UC (4) , shorter disease duration (4) and resistance to corticosteroid therapy (5).

Conclusion

Our results show that anti-PR3 Abs could be a potential marker of UC useful in differentiating UC from CD in Tunisian population. This is in line with published data in Chinese and Caucasian populations. Immunodot results seem to be concordant with previously used techniques in context of IBD.

References

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