



FC RECEPTORS IN PEMPHIGUS AND BULLOUS PEMPHIGOID

J. Gornowicz-Porowska¹,

A. Seraszek-Jaros², M. Bowszyc-Dmochowska³, P. Bartkiewicz¹, E. Kaczmarek²,
M. Dmochowski¹

¹Autoimmune Blistering Dermatoses Section, Department of Dermatology, ²Department of Bioinformatics and Computational Biology, ³Cutaneous Histopathology and Immunopathology Section, Department of Dermatology, Poznan University of Medical Sciences, Poznan, Poland

INTRODUCTION

Fc receptors (FcRs) due to their effector functions may modulate the immunological response of pemphigus and bullous pemphigoid (BP). However, the identification of specific FcR, which can underlie their pathogenesis is still lacking.

AIM OF THE STUDY

Here, we investigated the cutaneous IgG FcRs (CD32A, CD32B, CD16A) and IgE FcR (MS4A2) immunoexpression in relation to the level of anti-desmoglein1/3 (DSG1/DSG3) IgG in pemphigus, anti-BP180/BP230 IgG in BP as well neutrophil activation (via neutrophil elastase - NE releasing) in both diseases and eosinophil activation (via major basic protein -MBP releasing) in BP.

MATERIAL AND METHODS

Skin/mucosal tissues, sera and blister fluid from pemphigus/BP patients were examined. In total, 56 patients were studied (28 pemphigus, 28 BP). The immunohistochemical technique with quantitative digital morphometry (measurement of FcRs expression intensity) and ELISAs (evaluation of autoantibodies) were used.

RESULTS

The positive relationship was detected in BP between CD32A and CD32B expression ($r=0.701$) as well as CD32A expression and anti-BP180 IgG in blister fluid ($r=0.673$). There was a significant correlation ($r=0.680$) between MS4A2 and MBP expression in BP. CD32B was most abundantly expressed in cutaneous lesions in pemphigus and BP (statistically significant higher expression in both groups).

There was a lack of correlations between examined FcRs expressions and anti-DSG1/DSG3 IgG in pemphigus. We found no statistically significant correlation between examined FcRs and NE expression in pemphigus and BP.

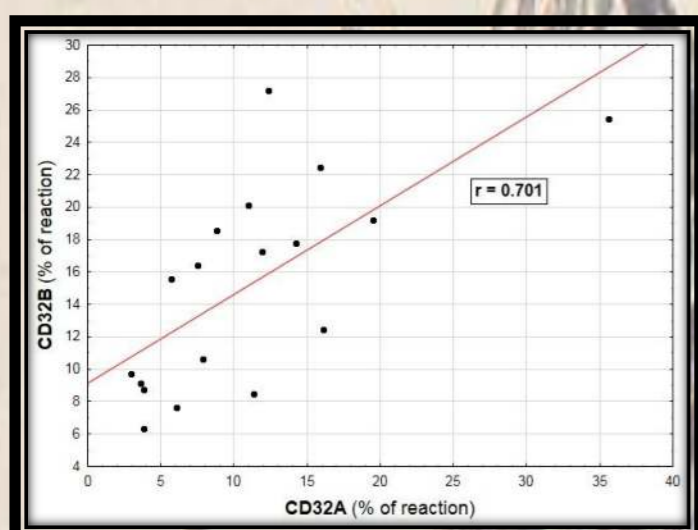


Fig.1 Positive Spearman correlation between cutaneous CD32A and CD32B immunoexpression in patients with BP. The trend line was shown.

Fig. 3 Positive Spearman correlation between cutaneous MBP and MS4A2 immunoexpression in patients with BP. The trend line was shown.

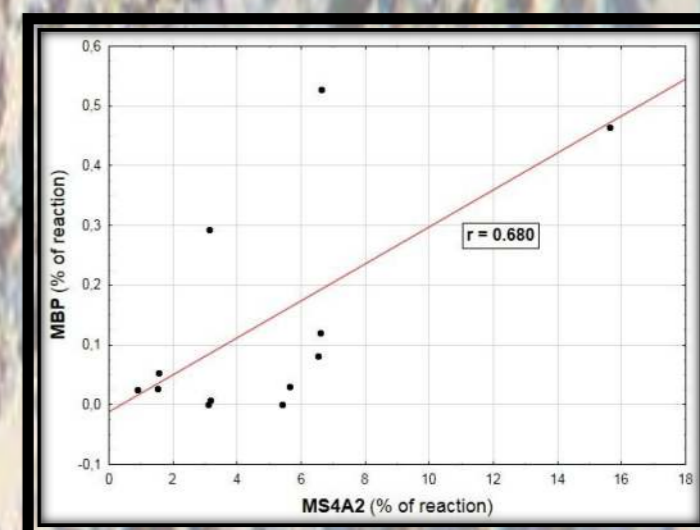


Fig. 4 MS4A2 immunoexpression in a representative patient with BP (immunoperoxidase staining on paraffin embedded sections, original magnification x200).

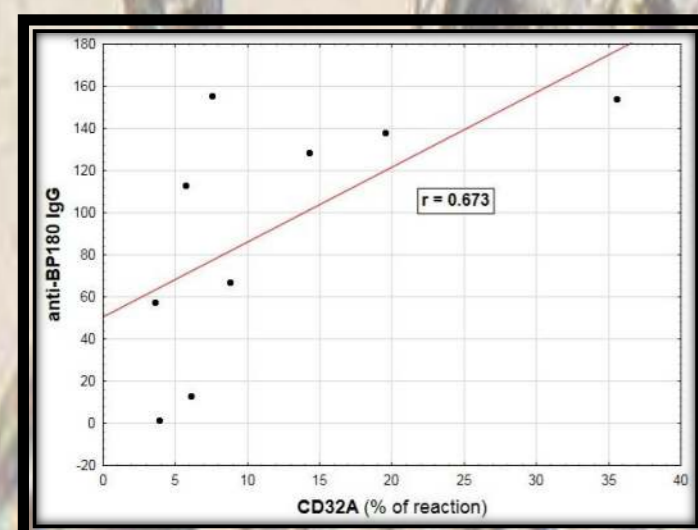
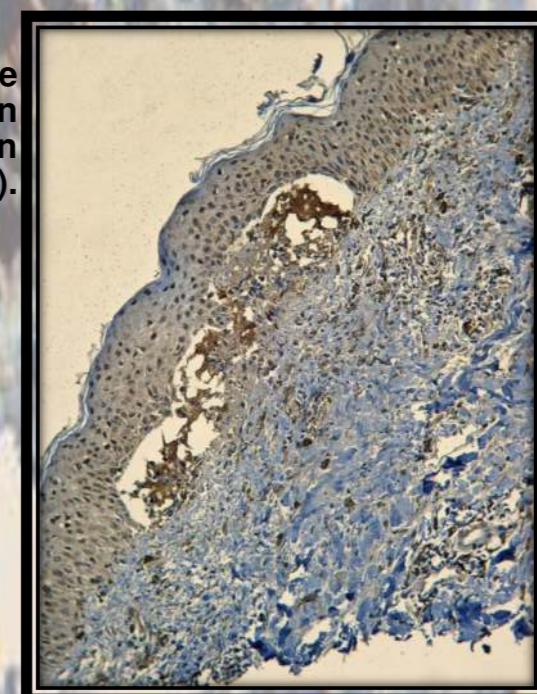


Fig.2 Positive Spearman correlation between cutaneous CD32A immunoexpression and anti-BP180 IgG in blister fluid in patients with BP. The trend line was shown.



CONCLUSIONS

It seems that interaction between CD32A and CD32B can immunomodulate the inflammation in BP. CD32A appears to play an important role in mediating skin injury in BP, probably through the BP180-dependent way. Eosinophils are activated probably in conjunction with MS4A2 expression in BP.

REFERENCES

- Gornowicz-Porowska J, Seraszek-Jaros A., Bowszyc-Dmochowska M, Kaczmarek E., Pietkiewicz P., Bartkiewicz P., Dmochowski M. A comparative study of expression of Fc receptors in relation to the autoantibody-mediated immune response and neutrophil elastase expression in autoimmune blistering dermatoses. *Pol J Pathol*, 2017: 109-116.