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Original Article

MYZAP a newly protein expressed in the skin is autoantigen for patients with endemic pemphigus foliaceus in El Bagre, Colombia

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ABSTRACT

Background: We detected autoantibodies against a new complex cell junction, the area composita of the heart [an intricate cell junction that includes the protein Myocardial Zonula Adherens Protein (MYZAP, AKA MYOZAP)] in patients affected by a new variant of endemic pemphigus foliaceus in El Bagre, Colombia, South America (El Bagre-EPF). **Methods:** We aimed to study if MYZAP was expressed in the skin, and, if so, its relationship with El Bagre-EPF autoantigens. We utilized a case-control study, testing 43 patients and 43 controls from the endemic area matched by demographics, age, gender, living place, and work activities using multiple immunological methods. **Results:** MYZAP is expressed in the human skin (epidermis and dermis), as well in the skin appendages, their neurovascular supply structures, and neural receptors (in all of these sites, mostly in the cells junctions). MYZAP present in the cell membranes, and is also located in intracytoplasmic and nuclear regions. All El Bagre-EPF patient autoantibodies perfectly colocalized with MYZAP (a commercial antibody from Progen Biotechnik, Heidelberg, Germany) in the skin ($p < 0.01$). **Conclusion:** We describe for the first time in the medical literature the expression of a new protein MYZAP in several structures in the skin, colocalizing with El Bagre-EPF autoantigens and suggesting that further studies could focus on the putative roles of this molecule in the skin.

Key words: Endemic pemphigus foliaceus in El Bagre, MYZAP, skin, cells junctions

Abbreviations: Endemic pemphigus foliaceus (EPF), endemic pemphigus foliaceus in El Bagre (El Bagre-EPF), fogo selvagem (FS), hematoxylin and eosin (H&E), immunofluorescence (DIF), immunohistochemistry (IHC), confocal microscopy (CFM), basement membrane zone (BMZ), intercellular stain between keratinocytes (ICS), The intercalated disc (ID), adherens junctions (AJ), desmoglein 1 (Dsg1), Myocardial Zonula Adherens Protein (MYZAP), (glutamate ionotropic receptor N-methyl-D-aspartate receptor type subunits (GRINL1A), adherens junctions (AJs), the intercalated disk (ID), serum response factor (SRF), The ionotropic glutamate N-methyl D-aspartate (NMDA), fluorescein isothiocyanate (FITC).

INTRODUCTION

Endemic pemphigus foliaceus (EPF) provides a superb model to study autoimmune diseases, given its geographic and family clustering, immune response, patient genetics and putative triggering factor(s) [1-9]. EPF is seen in South America, Central America, as well as in Tunisia, Africa [6] and it has a genetic component, as well as putative triggering factors [1-10]. El Bagre-EPF is an autoimmune disease that has several clinical forms including a form frustre (localized to the skin, mostly of the face and upper chest), and a spectrum

How to cite this article: Abreu Velez AM, Upegui-Zapata YA, Valencia-Yepes CA, Upegui-Quiceno E, Yi H, Howard MS. MYZAP a newly protein expressed in the skin is autoantigen for patients with endemic pemphigus foliaceus in El Bagre, Colombia. Our Dermatol Online. 2020;11(4):340-345.

Submission: 02.07.2020; **Acceptance:** 07.07.2020

DOI: 10.7241/ourd.20204.2