

Publication

Expression of PD-1 and Tim-3 is increased in skin of patients with bullous pemphigoid and pemphigus vulgaris

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Bullous pemphigoid (BP) and pemphigus vulgaris (PV) are common autoimmune bullous dermatoses (AIBD) characterized by blisters and erosions. Treatment options are limited and often insufficient. Immune checkpoint receptors play critical roles in immune homeostasis and self-tolerance. Targeting checkpoint receptors is highly efficient in treatment of various cancers, but often also associated with autoimmune side effects.; We therefore aimed to investigate the expression of immune checkpoint receptors in patients with BP and PV.; We analysed expression of the checkpoint receptors programmed cell death protein 1 (PD-1), T-cell immunoglobulin and mucin domain 3 (Tim-3) and lymphocyte activation gene 3 (Lag-3) in lesional skin of patients with BP and PV compared to healthy control skin as well as the expression patterns of PD-1 and Tim-3 on various infiltrating immune cells in skin sections of AIBD by immunohistochemistry and immunofluorescence. We also measured serum levels of soluble PD-1, Tim-3 and Lag-3 in AIBD patients by ELISA.; We report on increased expression of PD-1 and Tim-3, but not Lag-3, in lesional skin of patients with BP and PV. Investigating the expression pattern of PD-1 and Tim-3 on different cutaneous immune cells, we observed significant upregulation of PD-1 predominantly on infiltrating CD8 T cells and upregulation of Tim-3 on CD8 T cells as well as macrophages.; Our results suggest exploring immune checkpoint receptors as novel therapeutic targets using an agonistic approach in autoimmune bullous diseases.

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