Mast Cells in Psoriasis

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Recent studies have shown that mast cells may play a role in the pathogenesis of psoriasis [1]. Toluidin blue reaction is the conventional method used for investigation of mast cells. Lysozyme (muramidase), α -, -antitrypsin (AAT), and CD68 antibodies are well-defined markers of histiocyte and monocyte lineage and these antibodies may react with mast cells.

The study included 20 patients with psoriasis vulgaris and 20 controls. The biopsy specimens for controls were obtained from healthy skin tissue of patients with basal cell carcinoma after excision. Lesional psoriatic skin and control specimens were fixed in 10% buffered formalin and embedded in paraffin wax. Sections were cut at 5 μ m and stained with 0.001% toluidin blue (pH 4.00); immunostaining was performed with the previously described streptavidin biotin peroxidase method [2]. The following antibodies were used: CD68 (KPl, monoclonal, mouse), AAT (polyclonal, rabbit), and lysozyme (polyclonal, rabbit) (Biogenex Laboratories, San Ramon, USA). The number of reactive cells was counted in 10 high power fields (HPF) (5 subepidermal, 3 middermal, 2 deep-dermal zones) (Nikon Optiphot-2 microscope, $\times$ 10 ocular, $\times$ 40 objective; 1 HPF = 0.125 mm²) [3]. Results are expressed as mean $\pm$ SEM. Student's t test was performed for statistical analysis.

The number of mast cells with positive toluidin blue reaction was significantly higher in lesional psoriatic skin (8.27 ± 0.66) than in controls (3.11 ± 0.41) ($p < 0.05$). The number of cells with positive CD68, AAT, and lysozyme staining was not significantly different between psoriasis and controls (table 1).

Table 1. Number of cells positive with CD68, AAT and lysozyme (mean $\pm$ SEM) (1 HPF = 0.125 mm²)

CD68(KPl)	AAT	Lysozyme	Toluidin blue
Psoriasis	1.80 ± 0.18	2.08 ± 0.33	2.02 ± 0.47
Control	1.96 ± 0.36	1.75 ± 0.16	1.52 ± 0.19
	3.11 ± 0.41	$p > 0.05$	$p > 0.05$
		$p > 0.05$	$p < 0.05$

This study showed increased mast cells in psoriasis, and thus confirms previous reports [1, 4]. To our knowledge lysozyme, AAT and CD68 (KPl) antibodies have not been previously studied in

psoriasis and our investigation shows that the use of these antibodies does not reveal any difference between psoriasis and normal skin tissue.

There is different staining of mast cells with toluidin blue reaction and lysozyme, AAT, and CD68 (KPl) in psoriasis; the cause and significance of this difference remain to be defined by further studies.

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