

Increased frequency of circulating classical monocytes in patients with rosacea

Cuie Gao¹, Lan Ge¹, Dewei Chen¹, Mengjie Zhang¹, Li Zhao¹, Wenying Liu¹, Shuguang Chen¹, Juan Wang¹, Cunjian Zhou², Xingwang Zhao¹, Shifei Li¹, Zhiqiang Song³, and Jian Li²

¹Army Medical University

²Southwest Hospital, Army Medical University

³Southwest Hospital, Third Military Medical University. Chongqing 400038, China

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Abstract

Monocyte subsets, including classical, intermediate and non-classical monocytes, are involved in the pathogenesis of inflammatory or autoimmune diseases. The pathogenic role of monocytes in the peripheral blood mononuclear cells (PBMCs) of patients with rosacea remains unclear. This study aimed to assess frequencies of monocyte subsets in PBMCs from rosacea patients before and after clinical treatment. We applied flow cytometry to examine frequencies of monocyte subsets in 116 patients with rosacea, while patients with 26 systemic lupus erythematosus (SLE), 28 acne and 42 normal healthy subjects without skin problems (HC) were recruited as controls. Expression of CCR2 on monocytes and plasma levels of CCL2, HMGB-1, IL-1 β and TNF- α were measured in HC and rosacea patients before and after treatment. The frequency of classical monocytes, but not intermediate or non-classical monocytes, was higher in rosacea as compared with HC, which decreased after treatment. Frequencies of monocyte subsets showed no gender difference, while increased with age in patients but not in HC. Frequencies of classical monocytes in patients with erythematotelangiectatic rosacea (ETR) and ETR-papulopustular rosacea (PPR) overlap were significantly higher than HC or patients with only PPR or phymatous rosacea (PhR). There was a significant higher expression of CCR2 in classical monocytes, with higher plasma levels of CCL2, HMGB-1, IL-1 β and TNF- α in patients than in HC, which all significantly decreased after treatment. Our data indicated a possible association between abnormal classical monocytes frequencies and rosacea.

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