

URTICARIA, ANGIOEDEMA

SERUM MIR-125A-5P ELEVATES IN CHRONIC SPONTANEOUS/IDIOPATHIC URTICARIA AND CORRELATES WITH TREATMENT RESPONSE

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Background: Chronic spontaneous urticaria/chronic idiopathic urticaria (CSU/CIU) is a common skin disorder associated with autoimmunity. MicroRNAs (miRNAs) are involved in the pathogenesis of some autoimmune diseases.

Objective: To investigate the association of miRNAs with CSU/CIU.

Methods In screening step, microarray analysis was performed to evaluate serum expression of 768 miRNAs in 20 CSU/CIU patients and 20 healthy controls. Then, in validation step, serum expressions of dysregulated miRNAs were measured by quantitative real time-polymerase chain reaction in 59 CSU/CIU patients and 58 healthy controls. Serum levels of CCL17 and IL-17 were detected using enzyme-linked immunosorbent assay.

Results: Serum relative expression of miR-125a-5p [0.024 (0.013-0.047) vs 0.009 (0.006-0.016), $P < 0.0001$] and serum CCL17 level [404.8 (273.1-541.9) vs 172 (91.5-226.7) pg/mL, $P < 0.0001$] were significantly elevated in CSU/CIU patients in comparison with healthy controls. The area under curve (AUC) values for serum miR-125a-5p and CCL17 were 0.794 (sensitivity 71.2%, specificity 77.6%) and 0.911 (sensitivity 78.0%, specificity 94.8%), respectively. Serum IL-17 was undetectable in nearly all CSU/CIU patients and healthy controls. Serum relative expression of miR-125a-5p [0.034 (0.028-0.103) vs 0.023 (0.013-0.047), $P = 0.012$] was even higher in refractory CSU/CIU cases ($n = 10$). In 12 CSU/CIU patients who reached remission, serum relative expression of miR-125a-5p [0.028 (0.007-0.058) vs 0.004 (0.002-0.009), $P = 0.018$] and serum CCL17 level [597.1 (346.3-976.6) vs 343.3 (256.6-488.9) pg/mL, $P = 0.001$] of remission phase decreased significantly in comparison with those of active phase.

Conclusion: High serum expression of miR-125a-5p in patients with CSU/CIU highlights a possible role of this miRNA in the pathogenesis of CSU/CIU.