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Title: The expression of CD39 mRNA is altered in peripheral blood of patients with allergic asthma

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Body: The ecto-enzyme CD39 can hydrolyze extracellular ATP which has pro-inflammatory effects. But the role of CD39 in patients with allergic asthma remains unknown. Eighteen patients with persistent asthma allergic to house dust mites and nineteen healthy volunteers were enrolled. The expression of CD39, GATA3, ROR- γ t and Foxp3 mRNA in PBMC were determined by SYBR Green Real-time PCR. The cytokines IL-4, IL-17A, TGF- β and DP.sIgE were detected by ELISA. Our data showed that the expression of CD39 mRNA in PBMC from asthmatics was significantly lower than that in normal controls ($1.49 \pm 0.59 \times 10^{-3}$ vs $2.17 \pm 0.77 \times 10^{-3}$, $P < 0.01$). CD39 mRNA was negatively correlated with serum IL-4, IL-17A and GATA3 ($r = -0.468$, $P < 0.05$; $r = -0.550$, $P < 0.05$; $r = -0.424$, $P < 0.01$), and positively correlated with Foxp3 and TGF- β ($r = 0.373$, $P < 0.05$; $r = 0.425$, $P < 0.05$). There was no statistical significance of the correlation between CD39 and ROR- γ t expression ($r = -0.259$, $P = 0.122$). These data suggest that CD39 mRNA expression was down-regulated in peripheral blood of asthmatics, which was positively relevant to serum IL-4, IL-17A and GATA3 and negatively relevant to serum TGF- β and Foxp3, and was not relevant to ROR- γ t. We speculated that CD39 may participate in the occurrence and progress of allergic asthma.