Background Salbutamol induces stimulation of beta2-receptors resulting in hypokalemia. Corticosteroids also induce plasma electrolytes variations.

Aims 1. To identify the relation between pH-Calcium (Ca), pH-Natrium (Na) and pH-Kalium (K) following low dose inhaled short-acting beta2-agonists. 2. To evaluate if concomitant inhaled corticosteroids treatment can modify the relation.

Methods We analysed all children admitted for moderate asthma exacerbation during 6 months period. Inclusion criteria: children between 5–18 years of age; PEF >50–75% of predicted value; serum electrolytes normal ranges. Exclusion criteria: previously treated patients with Salbutamol; Salbutamol hypersensitivity; others asthma exacerbation severity levels. The patients were divided into 2 groups: 1st group comprised those treated with beta2-agonists and 2nd group is represented by paediatric patients concomitantly treated with beta2-agonists and corticosteroids. Both groups were homogenous regarding age and sex ratio. During hospitalisation, patients received standard low dose of Salbutamol by metered dose inhaler (MDI) and inhaled Fluticasone propionate using spacer device with mouthpiece. Included patients were assessed for electrolytes serum levels and pH before treatment and 72 h after therapy. Data was analysed statistically using the Pearson correlation.

Results Among 269 admitted patients, 164 children fulfilled inclusion criteria. Both groups structure: 85 children in 1st group, 79 in 2nd group. Authors found for both groups a significant relation between serum kalium, serum calcium and natrium. (pvalue 0,010). The study didn’t confirm a significant variation of serum electrolytes in 2nd group as compare to 1st group.

Conclusions Study confirmed significant relationship between the serum electrolytes (kalium-calcium-kalium-natrium) after 72 h inhaled treatment with beta2-agonists.