

Expression of circulating angiotensin-converting enzyme 2 in children with asthma and the effects of inhaled corticosteroids – ACE2 expression in children with asthma

xiang ma¹, Lesen Liu¹, jing sun¹, yun zhang¹, yanqin liu¹, miao liu¹, Bing Wang¹, Yuna Chang¹, yuling han¹, and Zhongtao Gai¹

¹Shandong University

January 23, 2023

Abstract

Background: The global spread of Corona Virus Disease 2019 (COVID-19) has resulted in a significant disease burden, yet asthma patients do not have the expected high morbidity and mortality rates in the pandemics of COVID-19. Objective: To find the difference of angiotensin-converting enzyme 2 (ACE2) in asthma and non-asthma children and evaluate the effect of inhaled corticosteroids (ICS) on its expression. Methods: The ACE2, immunoglobulin E (IgE) and eosinophils were tested in different children. Results: A total of 157 children aged 3-16 years were enrolled. The expression of ACE2 in asthma children were lower than non-asthma children (T=-2.512, P=0.013). Allergic non-asthma children had a significant higher ACE2 expression than children with allergic asthma (P=0.013) and non-allergic asthma (P=0.029). The expression of ACE2 had no significant difference between first diagnosed asthma children and that had been treated with ICS for [?]6 months (F=0.028, P=0.598). The allergic asthma children showed a significantly higher Eosinophils cells (EC) count than the allergic non-asthma (W=200, P;0.001) and non-allergic non-asthma children (W=1089, P;0.001). Non-allergic asthma children also had a significant higher EC count than the allergic non-asthma (W=182.5, P;0.001) and non-allergic non-asthma (W= 200.5, P;0.001) children. There was no significant difference in IgE levels between asthmatic children and non-asthmatic children (W=2792.5, P= 0.18). Conclusion: Circulating ACE2 levels in asthmatic children were lower than those in non-asthmatic children and ICS treatment for [?]6 months did not affect the expression of ACE2 in peripheral blood in the asthma children.

Hosted file

Manuscript.DOC available at <https://authorea.com/users/574911/articles/620631-expression-of-circulating-angiotensin-converting-enzyme-2-in-children-with-asthma-and-the-effects-of-inhaled-corticosteroids-ace2-expression-in-children-with-asthma>





