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To the Editor:

Maes and colleagues present data from lung tissue which showed that mRNA expression for angiotensin converting enzyme 2 (ACE2) was significantly greater in 38 patients with moderate COPD compared to 61 healthy controls but not to a group 7 patients with asthma or asthma COPD overlap (ACO) (1). Furthermore values for ACE2 expression in a heterogeneous group of 23 patients with obstructive airways disease (OAD) comprising either COPD ,ACO or asthma not taking inhaled corticosteroids (ICS) were significantly higher compared to 56 controls but not to 25 patients with OAD taking ICS.

The problem with interpreting these results in a heterogeneous group of patients with OAD is that ACE2 is upregulated in smokers and in COPD but downregulated in asthma and atopy (2, 3). Furthermore assaying ACE2 mRNA only tells one half of the story with regards to entry of SARS-CoV-2 into lung tissue , since asthma and atopy are both associated with upregulation of transmembrane protease serine 2 (TMPRSS2) in airway epithelial cells (3). In this regard in induced sputum cells from asthma patients , ICS has been shown to exhibit suppressive effects ex vivo on both ACE2 and TMPRSS2 expression(4).

Maes et al fail to point out the inhibitory in vitro effects of ICS on local and systemic production interleukin-6 (5, 6), this being the strongest predictor for impending respiratory failure in severe COVID-19 infection (7). Finally a more specific ICS suppressive effect on SARS-CoV-2 replication has been described with ciclesonide and mometasone furoate but not with budesonide ,beclomethasone or budesonide (8).

Taken together we believe these observations reinforce the need for patients with eosinophilic asthma and COPD to continue taking their ICS containing controller therapy as that will provide optimal disease control and perhaps also confer protection against viral triggers perhaps including SARS-CoV-2 .

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