ACE2–Molecular speculations on abdominal symptoms after COVID-19 infection

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Abstract

There is growing evidence that the clinical manifestations of COVID-19 are not just respiratory, but also gastrointestinal symptoms. The difference of organ infection should be considered. In addition, as a key molecule mediating viral infection of cells, angiotensin-converting enzyme 2 (ACE2) provides an important intervention means for the exploration of antivirus. This is particularly important as the pandemic intensifies.

ACE2–Molecular speculations on abdominal symptoms after COVID-19 infection

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Abstracts: There is growing evidence that the clinical manifestations of COVID-19 are not just respiratory, but also gastrointestinal symptoms. The difference of organ infection should be considered. In addition, as a key molecule mediating viral infection of cells, angiotensin-converting enzyme 2 (ACE2) provides an important intervention means for the exploration of antivirus. This is particularly important as the pandemic intensifies.

Keywords: COVID-19; angiotensin-converting enzyme 2; gastrointestinal symptoms

Dear editor, we read with great interest an article in your journal about molecular mechanism of COVID-19 [1]. In particular, it is necessary for us to identify the role of ACE in COVID-19 infection. There is increasing evidence that abdominal symptoms are an important clinical manifestation of COVID-19 infection [2]. From this perspective, the clinical manifestation of any disease should not be excluded from the connection with novel coronavirus in the special pandemic period. However, we should explore the specific etiology of organ infection, especially as a clinician, it is necessary for us to focus on the molecular factors involved in the high incidence of abdominal organs after novel coronavirus infection.

To the best of our knowledge, angiotensin-converting enzyme 2 (ACE2) is the key factor that novel coronavirus can infect cells and further cause disease of related organs [3]. In other words, any organ expressing ACE2 is a potential target organ infected by novel coronavirus. Therefore, it is necessary to know the distribution of ACE2 in the abdominal organs. At present, it is relatively clear that ACE2 plays its role mainly by mediating the successful entry of virus into infected cells. Individual digestive organs, including the pancreas

and gall bladder, are rich in ACE2. This may be an important reason that ACE2 rich organs are susceptible to infection by novel coronavirus. In addition, viral infection is one of the causes of inflammation in digestive organs such as acute pancreatitis, hepatitis and acute appendicitis. At the same time, more evidence and studies are needed to confirm the risk of COVID-19 infections in other digestive organs.

From this perspective, the key role of ACE2 in the novel coronavirus infection process also provides us with a clear molecular target for precise intervention or treatment. We can assume that antagonists or blockers of ACE2 may be effective drugs to intervene in cells infected with COVID-19. However, according to what we know, ACE2 plays an important role in maintaining homeostasis in the human body and thus preventing organ damage. Therefore, we need to evaluate adequately the role of ACE2 in both injury resistance and virus infection mediation. We urgently need to do so, especially in the midst of COVID-19 pandemic.

Obviously, the diagnosis and treatment of digestive diseases during the pandemic is fraught with unprecedented difficulties and challenges. Fortunately, from the autopsy pathology, we can more clearly identify which gastrointestinal organs have novel coronavirus infection and the pathological manifestations after infection [4]. Next, we may explore antiviral means or organ-specific targeted drugs according to the distribution characteristics of organ ACE2. As the pandemic continues to spread and intensify, we do not want the diagnosis and treatment of digestive diseases to be missed or misdiagnosed. Ultimately, figuring out the pathological and molecular characteristics of novel coronavirus will better serve doctors in clinical practice and provide scientific basis for diagnosis, treatment and prevention and control of epidemic diseases.

Declarations

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