Letter: serum HBcrAg is a useful marker for disease monitoring, predicting treatment response and disease outcome of chronic hepatitis B virus infection—authors' reply

Hepatitis B core-related antigen (HBcrAg) levels in the natural history of hepatitis B virus infection in a large European cohort predominantly infected with genotypes A and D

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A critique and systematic review of the clinical utility of hepatitis B core-related antigen

Celina Adraneda [#] • Yong Chuan Tan [#] • Ee Jin Yeo • Guan Sen Kew • Atefeh Khakpoor • Seng Gee Lim •

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Published: December 27, 2022 • DOI: https://doi.org/10.1016/j.jhep.2022.12.017

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Conclusions

HBcrAg has a mixed performance and has a poor correlation with HBsAg loss and antiviral therapy, hence HBcrAg results should be interpretated with caution.

Impact and implications

• Hepatitis B core-related antigen (HBcrAg) has been used to assess management of Chronic Hepatitis B (CHB) patients without a systematic and critical review of its performance

• We found that HBcrAg had false positive rate of 9% and false negative of 12-35% raises concerns although larger studies are need for validation

Gut and Liver

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Review Article

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Forthcoming Step in Gastric Cancer Prevention: How Can Risk Stratification Be Combined with Endoscopic Screening for Gastric Cancer?

Although the concern for gastric cancer prevention has increased, gastric cancer has remained a heavy burden worldwide and is not just a local issue in East Asian countries. However, as several screening programs (listed below) have shown some success, it is important to determine whether the situation is changing in some other countries and whether similar methods should be recommended. Endoscopic screening has been performed as a national program in South Korea and Japan, and the results have shown a reduction in gastric cancer mortality. Although the efficacy of *Helicobacter pylori* eradication has been established, the efficacy of the screen-and-treat strategy is presently being evaluated in randomized controlled trials. The serum pepsinogen test and endoscopic examination can divide high-risk subjects with severe gastric atrophy from average-risk subjects. Risk stratification is anticipated to contribute to an efficient method of prediction of gastric cancer development when combined with endoscopic screening. Countries with a high incidence rate should realize the immediate need to reduce gastric cancer death directly by endoscopic screening and should recognize screen-and-treat as a second option to reduce future risk. However, all forms of gastric cancer prevention programs have some harms and potential to increase unnecessary examinations. A balance of the benefits and harms should be always considered. Although further study is needed to obtain sufficient evidence for gastric cancer prevention, the best available method should be examined in the context of each country.

Keywords: Stomach neoplasms, Mass screening, *Helicobacter pylori* antibodies, Serum pepsinogens, Endoscopes

World Journal of Gastroenterology

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PMID: 25320514

Current issues and future perspectives of gastric cancer screening

Chisato Hamashima

Gastric cancer remains the second leading cause of cancer death worldwide. About half of the incidence of gastric cancer is observed in East Asian countries, which show a higher mortality than other countries. The effectiveness of 3 new gastric cancer screening techniques, namely, upper gastrointestinal endoscopy, serological testing, and “screen and treat” method were extensively reviewed. Moreover, the phases of development for cancer screening were analyzed on the basis of the biomarker development road map. Several observational studies have reported the effectiveness of endoscopic screening in reducing mortality from gastric cancer. On the other hand, serologic testing has mainly been used for targeting the high-risk group for gastric cancer. To date, the effectiveness of new techniques for gastric cancer screening has remained limited. However, endoscopic screening is presently in the last trial phase of development before their introduction to population-based screening. To effectively introduce new techniques for gastric cancer screening in a community, incidence and mortality reduction from gastric cancer must be initially and thoroughly evaluated by conducting reliable studies. In addition to effectiveness evaluation, the balance of benefits and harms must be carefully assessed before introducing these new techniques for population-based screening.

NEWS RELEASE 22-DEC-2022

COVID-19 booster increases durability of antibody response, research shows

Peer-Reviewed Publication

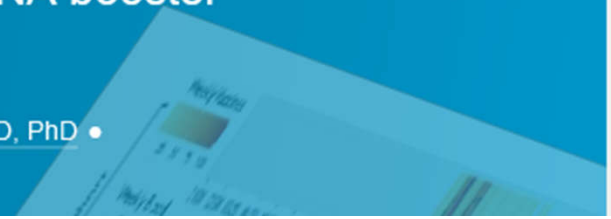
UNIVERSITY OF VIRGINIA HEALTH SYSTEM

Annals of Allergy, Asthma & Immunology

FULL LENGTH ARTICLE | VOLUME 130, ISSUE 1, P67-73, JANUARY 01, 2023

Enhanced SARS-CoV-2 IgG durability following COVID-19 mRNA booster vaccination and comparison of BNT162b2 with mRNA-1273

Samuel M. Ailsworth, BA • Behnam Keshavarz, PhD • Nathan E. Richards, MD • ... Michael R. Nelson, MD, PhD • Thomas A.E. Platts-Mills, MD, PhD • Jeffrey M. Wilson, MD, PhD • Show all authors



Background

BNT162b2 (Pfizer/BioNTech, Comirnaty) and mRNA-1273 (Moderna, Spikevax) are messenger RNA (mRNA) vaccines that elicit antibodies against the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) spike receptor-binding domain (S-RBD) and have been approved by the US Food and Drug Administration to combat the coronavirus disease 2019 (COVID-19) pandemic. Because vaccine efficacy and antibody levels waned over time after the 2-shot primary series, the US Food and Drug Administration authorized a booster (third) dose for both mRNA vaccines to adults in the fall of 2021.

Photon-Counting CT Shows More Post-COVID-19 Lung Damage

Researchers detect subtle abnormalities not seen in conventional CT

Original Research
Thoracic Imaging

Free Access

Detection of Post-COVID-19 Lung Abnormalities: Photon-counting CT versus Same-day Energy-integrating Detector CT

Florian Prayer[1], Patric Kienast[1], Andreas Strassl[1], Philipp. T. Moser[1], Dominik Bernitzky[2], Christopher Milacek[2], Mariann Gyöngyösi[3], Daria Kifjak[1,4], Sebastian Röhrich[1], ... Show all authors

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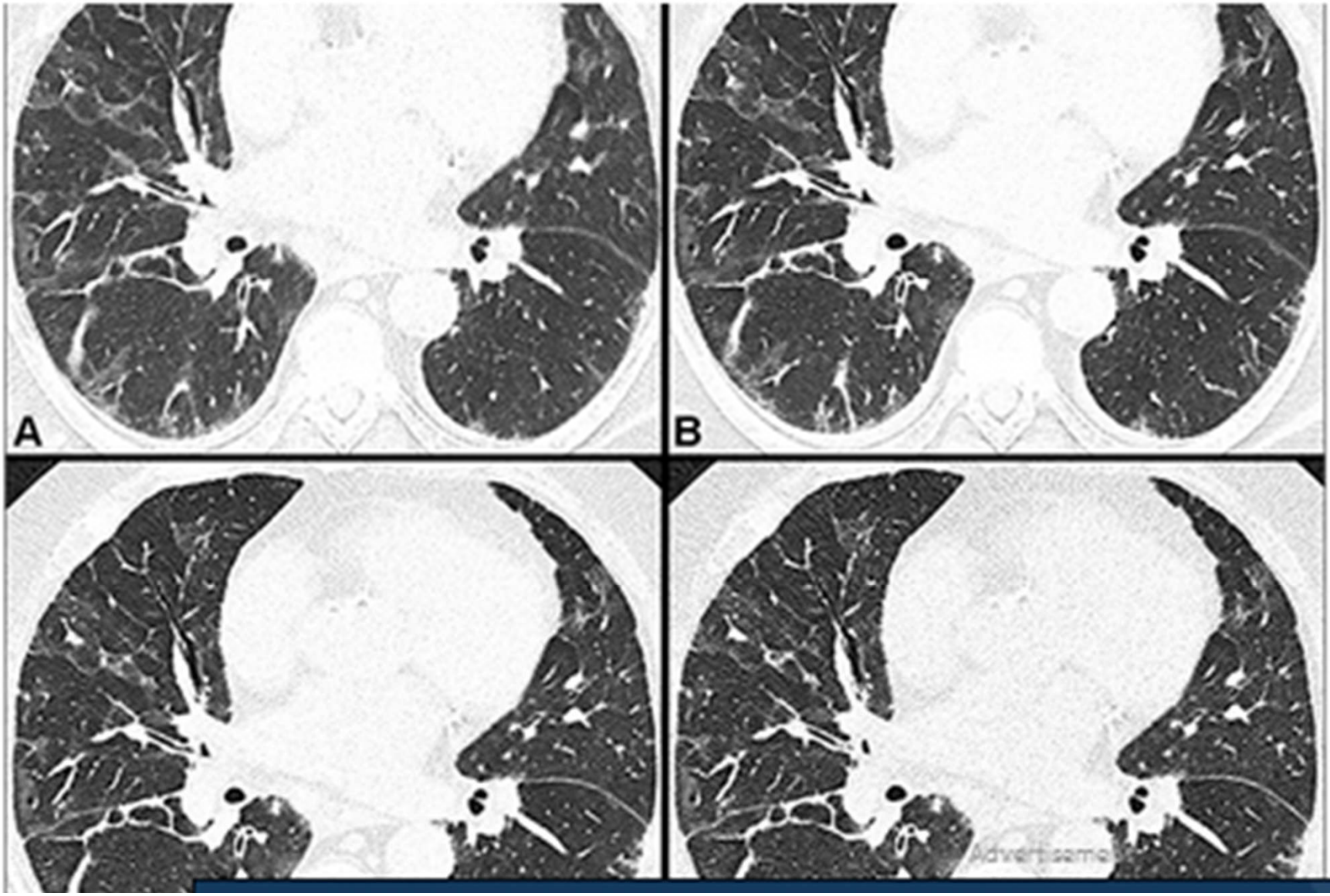
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The international journal of science / 5 January 2023

nature

No room for COVID complacency in 2023

Stark scenes from China show the pandemic is far from over. One solution is a laser-like focus on strengthening public-health systems.

In many places, life took on a semblance of pre-COVID normality in 2022, as countries shed pandemic-control measures. Governments ended lockdowns, reopened schools and scaled back or abandoned mask-wearing mandates. International travel resumed.

There were optimistic proclamations, too. In January, Danish Prime Minister Mette Frederiksen declared that SARS-CoV-2 no longer poses a threat to society. In September, US President Joe Biden remarked during an interview that the pandemic was over. Even Tedros Adhanom Ghebreyesus, director-general of the World Health Organization (WHO), has expressed hope that COVID-19's designation as a global emergency will end in 2023.

This belies the devastation that the disease continues to cause. The starkest example is in China, one of the last countries to ease pandemic-control measures in the face of the fast-spreading Omicron variant. Scenes emerging from Chinese hospitals over the past few weeks have been reminiscent of the havoc that Omicron wrought in Hong Kong nearly a year ago. China might have seen widespread

> **"Overall death rates in many countries remain higher than before COVID-19 hit."**

in some, the uptake of boosters has been dismal, e
though these substantially reduce death and severe illn

One path to renewing vaccination efforts lies with t
nology. Development of mucosal vaccines is under v
These are designed to be delivered through the nos
mouth and it's hoped they can trigger sterilizing immu
that blocks transmission – not just severe illness. China
approved an inhalable booster dose and a nasal vacc
and India a two-dose nasal-drop primary vaccine. Iran
Russia have also each approved a mucosal vaccine.
researchers are waiting on data to check whether an
these deliver on their promise of stopping SARS-CoV

One thing that could shake COVID complacency is
emergence of one or more 'variants of concern' (VO
New variants of the virus will emerge over the next y
as they did in 2022. But a VOC designation (and a co
sponding Greek letter from the WHO) will be given on
a variant is better at evading the immune system, cau
more severe disease or is much more transmissible t
those currently circulating. A new VOC must spur actio
ensure that fully vaccinated people – especially those
are older or immunocompromised – receive booster do

A new variant must also prompt redoubled vaccina
efforts in lower-income nations. Global collaboratio
such as COVAX, were established to deliver vacci
equitably. But they faltered as wealthy nations prioriti
vaccinating their own populations. Too often, vaccines
low- and middle-income countries (LMICs) were delive
sporadically and close to their date of expiry, exacerba
the challenge of rolling them out in places with limi
health-care infrastructure.

The result is that only one-quarter of people in low-inc
countries have received at least one dose of a coronav
vaccine. Many low-income countries need to get bac

REVIEW

Long COVID: The latest manifestations, mechanisms, and potential therapeutic interventions

Shi-ting He* | Kexin Wu* | Zixuan Cheng* | Mengjie He* | Ruolan Hu* | Ning Fan | Lin Shen | Qirui Li | Huahao Fan* | Yigang Tong*

Qirui Li | Huahao Fan* | Yigang Tong*

Abstract

COVID-19 caused by SARS-CoV-2 infection affects humans not only during the acute phase of the infection, but also several weeks to 2 years after the recovery. SARS-CoV-2 infects a variety of cells in the human body, including lung cells, intestinal cells, vascular endothelial cells, olfactory epithelial cells, etc. The damages caused by the infections of these cells and enduring immune response are the basis of long COVID. Notably, the changes in gene expression caused by viral infection can also indirectly contribute to long COVID. We summarized the occurrences of both common and uncommon long COVID, including damages to lung and respiratory system, olfactory and taste deficiency, damages to myocardial, renal, muscle, and enduring inflammation. Moreover, we provided potential treatments for long COVID symptoms manifested in different organs and systems, which were based on the pathogenesis and the associations between symptoms in different organs. Importantly, we compared the differences in symptoms and frequency of long COVID caused by breakthrough infection after vaccination and infection with different variants of concern, in order to provide a comprehensive understanding of the characteristics of long COVID and propose improvement for tackling COVID-19.

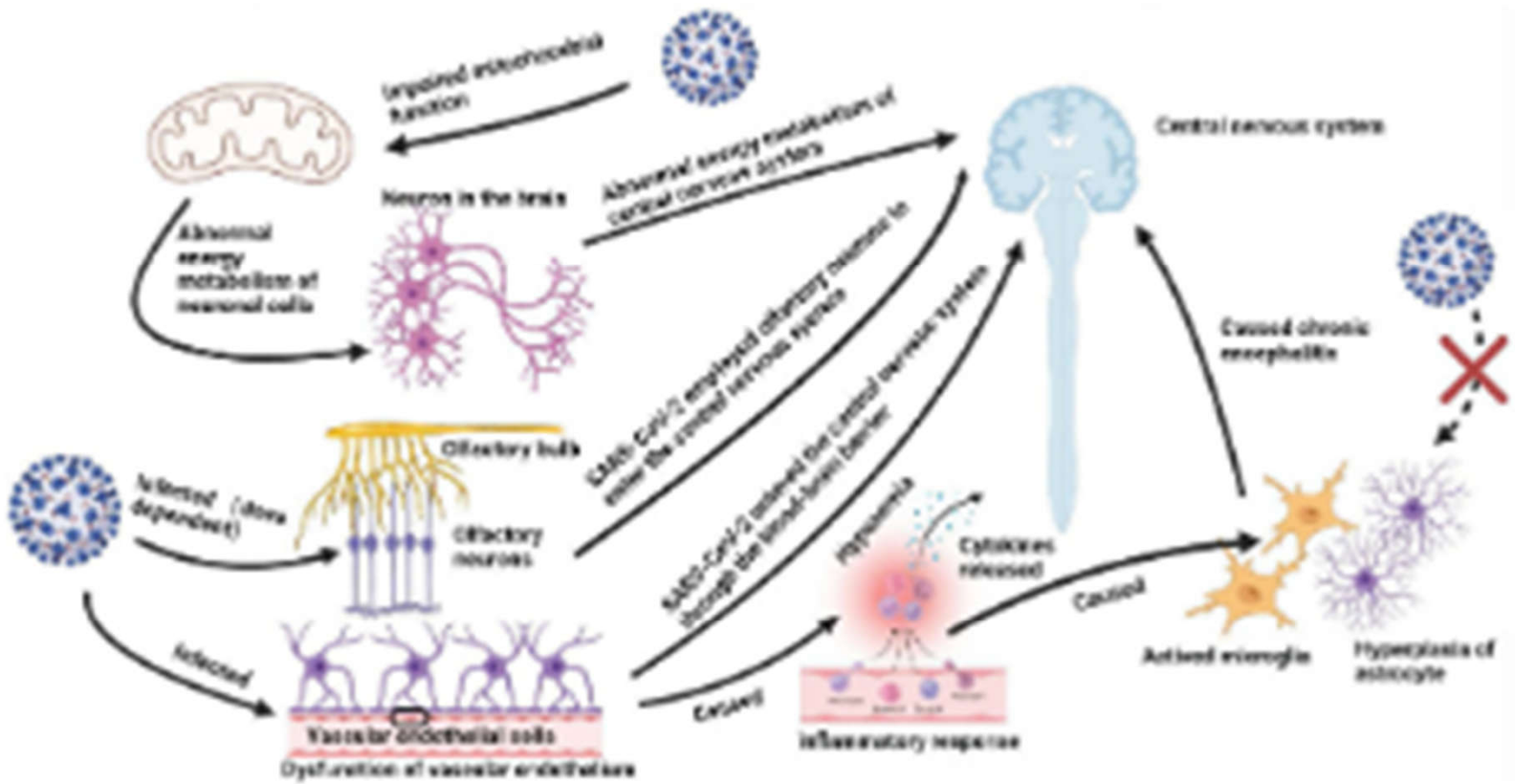

FIGURE 1 Putative mechanisms of neurological involvement. (1) SARS-CoV-2 employs olfactory neurons to enter the central nervous system. (2) SARS-CoV-2 enters the central nervous system through the blood–brain barrier. (3) SARS-CoV-2 infection induces mitochondrial dysfunction, leading to the abnormal energy metabolism of neurons. (4) SARS-CoV-2 infection induces cytokines release.

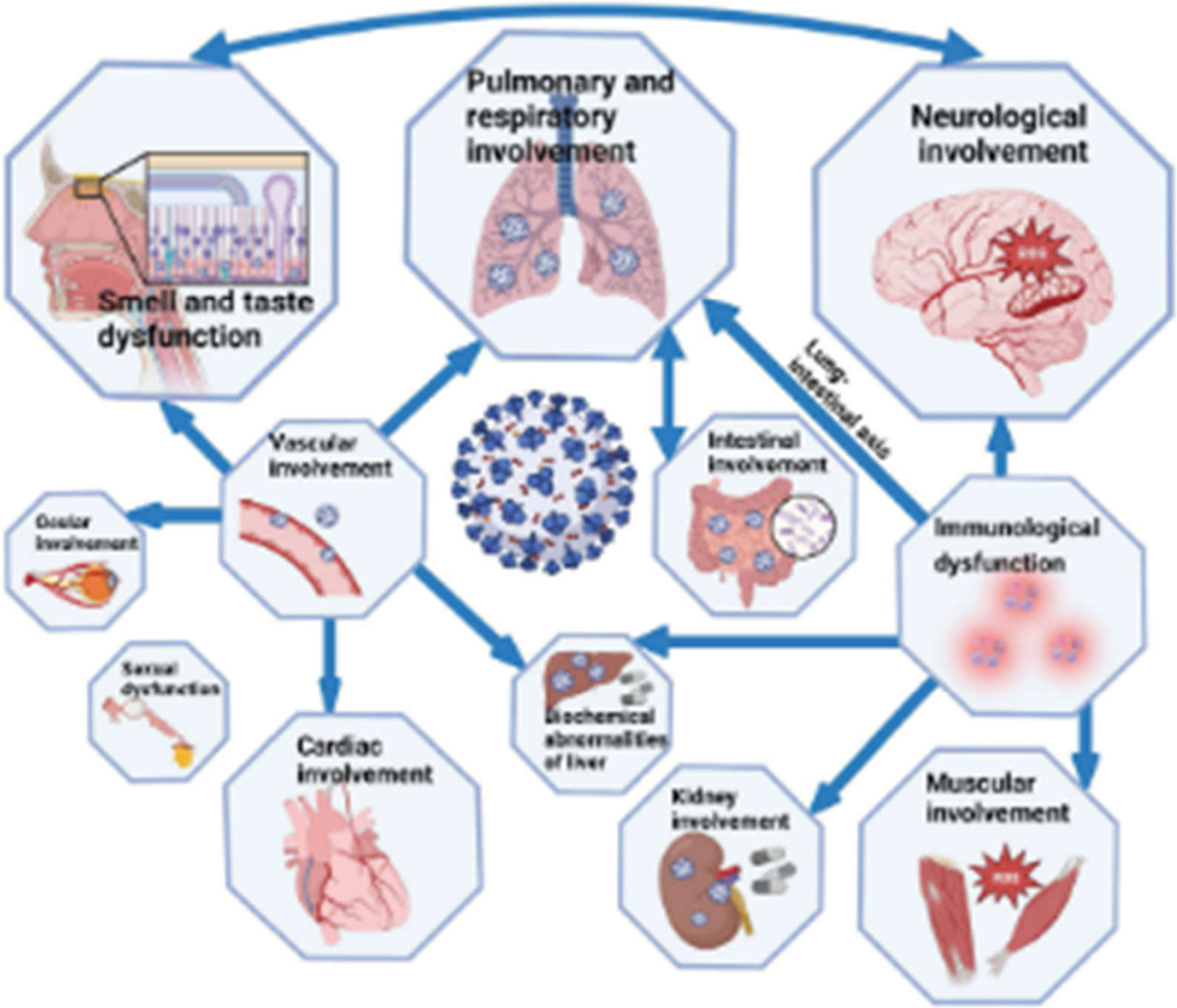

FIGURE 4 Long COVID symptoms discussed in the review. Correlations between different symptoms are showed by arrows. The