Risk factors for severe and critically ill COVID-19 patients: a review

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Abstract

The coronavirus disease 2019 pandemic (COVID-19), caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) has caused an unprecedented global social and economic impact, and numerous deaths. Many risk factors have been identified in the progression of COVID-19 into a severe and critical stage, including old age, male gender, underlying comorbidities such as hypertension, diabetes, obesity, chronic lung disease, heart, liver and kidney diseases, tumors, clinically apparent immunodeficiencies, local immunodeficiencies, such as early type-I interferon secretion capacity, and pregnancy. Possible complications include acute respiratory distress syndrome, shock, disseminated coagulopathy, acute kidney injury, pulmonary embolism, and secondary bacterial pneumonia. The development of lymphopenia and eosinopenia are laboratory indicators of COVID-19. Laboratory parameters to monitor disease progression include lactate dehydrogenase, procalcitonin, high-sensitivity C-reactive protein, proinflammatory cytokines such as interleukin (IL)-6, IL-1?, Krebs von den Lungen-6 (KL-6) and ferritin. The development of a cytokine storm and extensive chest computed tomography imaging patterns are indicators of a severe disease. In addition, socioeconomic status, diet, lifestyle, geographical differences, ethnicity, exposed viral load, day of initiation of treatment, and quality of health care have been reported to influence individual outcomes. In this review, we highlight the scientific evidence on the risk factors of COVID-19.

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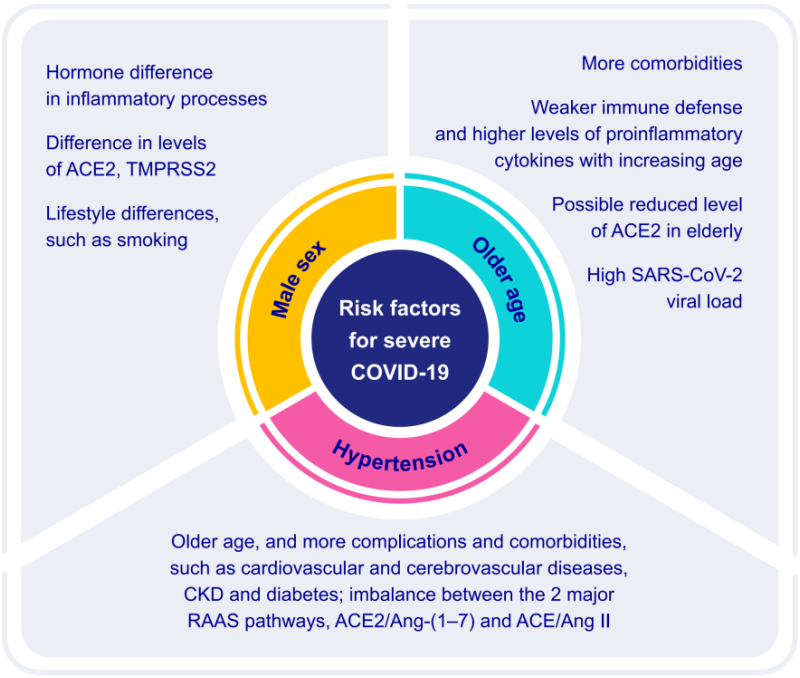


Figure 1_Yadong et al.

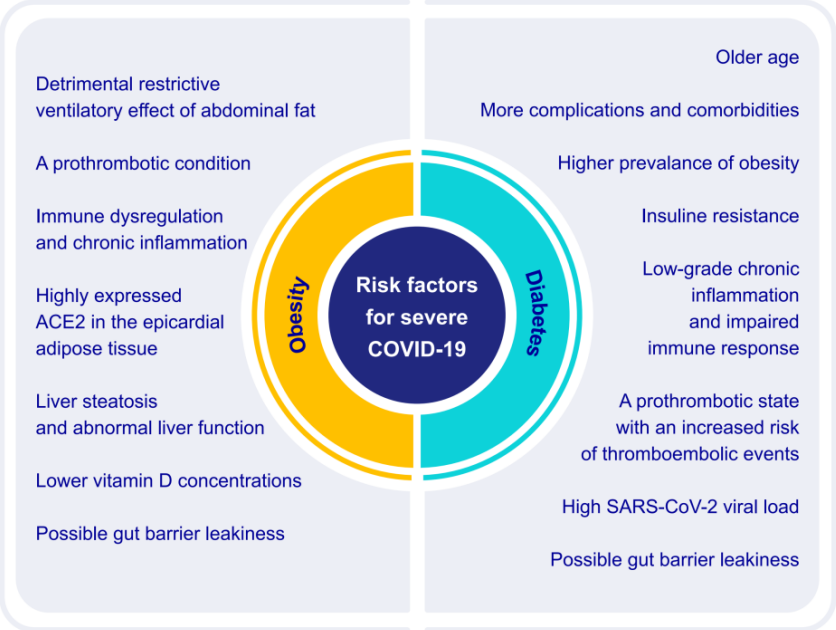
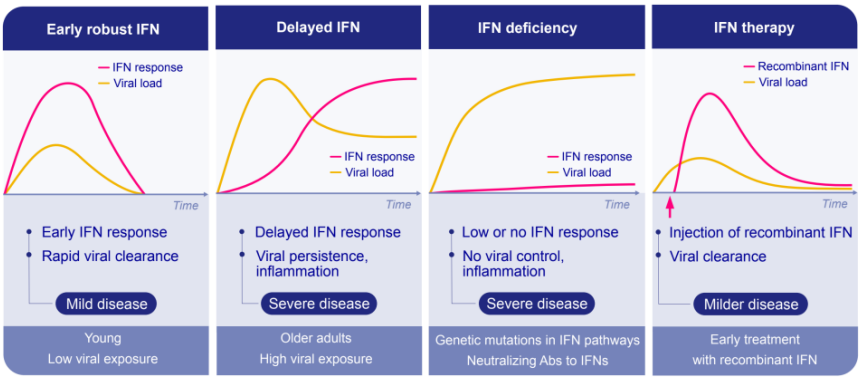


Figure 2_Yadong et al.

Figure 3_Yadong et al.



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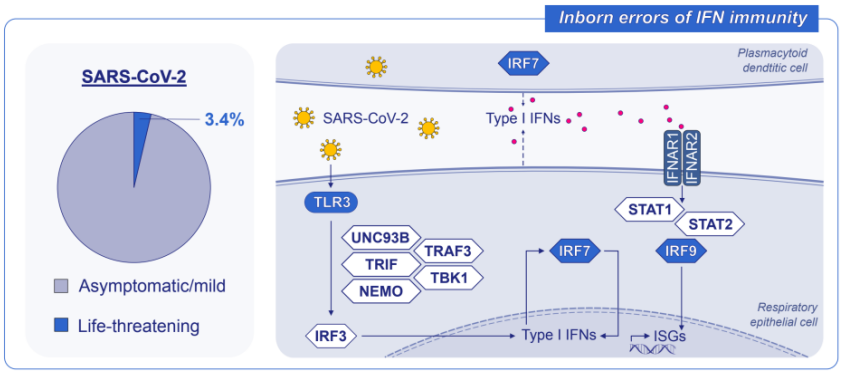

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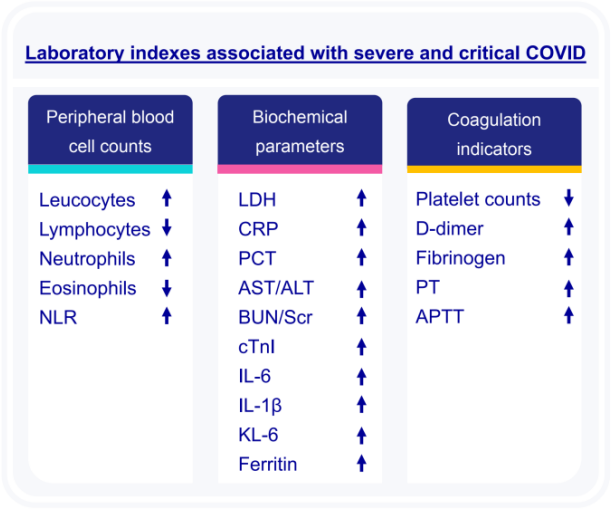

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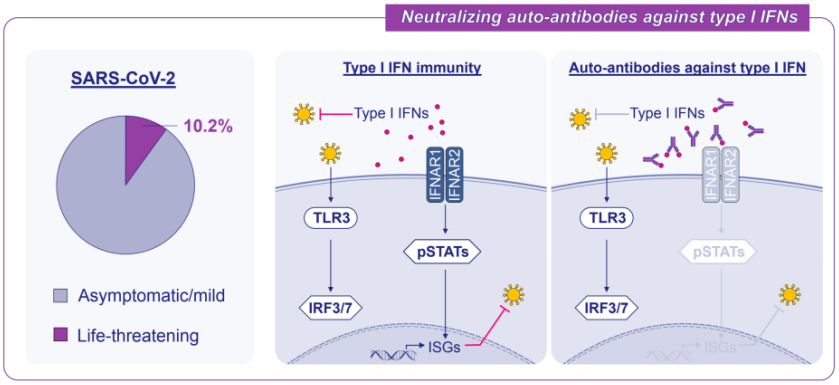

Figure 7_Yadong et al.

Figure 8_Yadong et al.