



Review of meta-analyses: risk factors associated with severe COVID-19 outcomes

Research questions and scope

A rapid evidence summary of meta-analyses investigating the relationship between comorbidities, demographic characteristics and lifestyle factors and severe outcomes in people diagnosed with SARS-CoV-2. Only meta-analyses of fair or good quality and published up until 23 June 2020 were included.

Key findings

There is consistent evidence from meta-analyses that older people and those with specific existing chronic conditions, including hypertension, cardiovascular diseases, cerebrovascular disease, diabetes, and chronic obstructive pulmonary disease have a greater risk of severe COVID-19 outcomes including death. The estimated risk of severe outcomes among COVID-19 patients with compared to without the condition was around 2-4 times as high for hypertension, 2-5 times as high for cardiovascular disease and cerebrovascular disease, 2-4 times as high for diabetes, and 3-6 times as high for chronic obstructive pulmonary disease. There was some evidence from meta-analyses that people with cancer or chronic kidney disease, people who smoke and males may also be at higher risk of severe COVID-19 outcomes, although findings were not consistent.

Key considerations

- Data is predominately from hospitalised patients in China
- There is overlap in the data and studies contributing to the different meta-analyses
- There is variation in the definitions of 'severe' disease between the meta-analyses, making comparisons between meta-analyses difficult
- It is not always clear what factors had been adjusted for in the estimates that went into the meta-analyses. This makes it difficult to disentangle independent associations from those that could be explained by other factors such as presence of comorbidities.
- Some risk factors were grouped together in ways that limits interpretation and clinical relevance. For example, grouping together different types of cancer or current smokers with past smokers.

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