Prevalence of coronavirus disease 2019 (COVID-19) in different clinical stages before the national COVID-19 vaccination programme in Malaysia: A systematic review and meta-analysis

ABSTRACT

More than 1.75 million COVID-19 infections and 16 thousand associated deaths have been reported in Malaysia. A meta-analysis on the prevalence of COVID-19 in different clinical stages before the National COVID-19 Vaccination Program in Malaysia is still lacking. To address this, the disease severity of a total of 215 admitted COVID-19 patients was initially recorded in the early phase of this study, and the data were later pooled into a meta-analysis with the aim of providing insight into the prevalence of COVID-19 in 5 different clinical stages during the outset of the COVID-19 pandemic in Malaysia. We have conducted a systematic literature search using PubMed, Web of Science, Scopus, ScienceDirect, and two preprint databases (bioRxiv and medRxiv) for relevant studies with specified inclusion and exclusion criteria. The quality assessment for the included studies was performed using the Newcastle–Ottawa Scale. The heterogeneity was examined with an I2 index and a Q-test. Funnel plots and Egger's tests were performed to determine publication bias in this meta-analysis. Overall, 5 studies with 6375 patients were included, and the pooled prevalence rates in this meta-analysis were calculated using a random-effect model. The highest prevalence of COVID-19 in Malaysia was observed in Stage 2 cases (32.0%), followed by Stage 1 (27.8%), Stage 3 (17.1%), Stage 4 (7.6%), and Stage 5 (3.4%). About two-thirds of the number of cases have at least one morbidity, with the highest percentage of hypertension (66.7%), obesity (55.5%), or diabetes mellitus (33.3%) in Stage 5 patients. In conclusion, this meta-analysis suggested a high prevalence of COVID-19 occurred in Stage 2. The prevalence rate in Stage 5 appeared to be the lowest among COVID-19 patients before implementing the vaccination program in Malaysia. These meta-analysis data are critically useful for designing screening and vaccination programs and improving disease management in the country.