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Real Estimates of Mortality following COVID-19 Infection; An Oversimplification of a Complex Issue

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Baud and his colleagues claimed that the mortality rate estimations which are based on the number of deaths relative to the number of confirmed cases of infection is not representative of the actual death rate. They stated that patients who die on any given day were infected much earlier, and thus the denominator of the mortality rate should be the total number of patients infected at the same time as those who died.

We agree to some extent with Baud et al. that the current mortality rate estimates are an underestimation of the potential mortality of the symptomatic coronavirus disease 2019 (COVID-19) patients (1). As we have just reached the exponential phase of the COVID-19 pandemic, especially outside of China, we support the authors' innovative suggestion to re-estimate the COVID-19 mortality rate by dividing the number of deaths on a given time by the number of confirmed symptomatic COVID-19 patients at an earlier time (time from onset of symptom to death) but the same region (1). Baud mortality estimation is based on time elapsed between diagnostic tests, not the start of symptoms, and death which reflects availability of tests, delay in reporting, health policy and implemented criteria for testing the patients.

Variations in medical advice-seeking habits of different societies, political stance of some countries to underreport cases or deaths, different screening strategies even for symptomatic patients, diversity of diagnostic tests [RT-PCR (sensitivity=63% for nasal swab, 32% for pharyngeal swab) (2), chest-CT (sensitivity=97%)(3), blood test [ELISA (sensitivity=93-99%)] (4), potential para-analytic/analytic pitfalls of COVID-19 tests (5), the fact that at the peak of the epidemy some countries lack the resources to check the symptomatic but less critical cases, makes real estimation of the COVID-19 mortality extremely challenging if not impossible.

During their assessment, Baud et al. overlooked a significant contributing factor when calculating the mortality rate; a growing number of critically ill cases piling up as the epidemy expands which significantly contributes to a higher mortality in the upcoming stages of epidemy. On the other hand, if the health-care system collapses during the peak of the spread, as happened in Italy and Spain, health-care providers have to choose between resuscitating the elderly or the young patients which could artificially increase the mortality rates even further.

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