

Asymptomatic and Presymptomatic Infectors: Hidden Sources of COVID-19 Disease

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Dear Editor,

With interest, we read the study by Sarah et al. who reported the first mildly ill, non-hospitalized case of COVID-19 in the United States[1]. The authors conducted rigorous public health surveys, contact tracking and serial SARSCoV-2 testing. In their research, despite specimens testing positive 18 days after diagnosis, no SARS-CoV-2 transmission occurred among 10 high-risk contacts of this patient, including 1 intimate contact. This study provided important insights for the spread of COVID-19. However, they promoted the possibility that mild cases can be released from isolation based on symptom resolution.

Some of the limitations of this study have been well summarized by the authors. In fact, the key problem should be that the use of a single COVID-19 case to demonstrate the infectivity of all mild cases is insufficient.

At the time of writing this paper, the authors claimed that "evidence regarding transmission from individuals with asymptomatic infection or mild illness is limited", but that the current evidence may need an update. Recently, two epidemiological studies on COVID-19 have reported that typically asymptomatic carriers transmit the virus to close contacts, resulting in aggregated infection of symptomatic COVID-19 diseases[2, 3]. On March 28, the *Chinese Journal of Epidemiology* published a prospective study from Zhejiang Province[4]. This study used a prospective design to follow up the viral load and clinical manifestations of 2147 close contacts of symptomatic and asymptomatic COVID-19 cases. Their conclusion is that the virus infection rates of close contacts were 6.30% (contact with symptomatic patients) and 4.11% (contact with asymptomatic patients), respectively. The authors suggested that the transmission ability of asymptomatic individuals should not be ignored.

In fact, even if patients with mild symptoms with a low ability to transmit the virus, the degradation of control measures still needs careful consideration. There are individual differences in the symptoms of the infectious disease, and the symptoms are often subjective and constantly changing, so it may be difficult to accurately define the severity of the symptoms in clinical practice. It is also difficult to distinguish patients with prodromal symptoms (with subsequent progression) from mild symptoms patients. In a recent article published in *MMWR* on April 1, a team from the National Centre for Communicable Diseases in Singapore reported seven clusters of cases in which presymptomatic transmission is the most likely explanation for the occurrence of secondary cases[5]. Similar cluster infections caused by presymptomatic infectors have been reported in other areas[6]. In addition, the proportion of asymptomatic patients among all patients may be higher than previously expected, with recent reports suggested a range of 30%-60%[7]. The huge number of asymptomatic infected individuals makes their role in the spread of SARSCoV-2 cannot be ignored.

In short, asymptomatic or mild cases of infection should be paid more attention, as China and some regions of Italy have done[8]. Inactive diagnosis and isolation may result in accumulation of infectious sources in the community, making it more difficult to control the "pandemic" of COVID-19.

All authors have no potential conflicts of interest.

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