

Letter to the Editor

Herd immunity and COVID-19

Dear Editor,

SARS-CoV-2 is the cause of the recent pneumonia outbreak in Wuhan, China. Since its emergence, it has spread worldwide, posing a major threat to global public health¹. However, in response to COVID-19, the UK has launched a herd immunity defense strategy that has aroused widespread controversy in the international community. Herd immunity refers to the introduction of pathogens into a population or animal group. Most individuals in the population acquire immunity from infection, and individuals with no immunity are indirectly protected from infection². The concept of herd immunity is of great importance in animal husbandry. For example, in the process of raising pigs, herds of pigs are vaccinated against viruses and subsequently produce antibodies. When pigs are exposed to the virus again, the virus cannot multiply or spread, thereby reducing the mortality of the pigs.

In general, after herd immunization, although the immune density can reach 100%, it is difficult to achieve full immunization coverage; those with missed immunizations or inadequate immunizations are not negligible. At the population level, the qualified rate of immunization is the most important index by which to evaluate the population immunization³.

Regarding SARS-CoV-2, UK Prime Minister Boris Johnson said, "It is going to spread further, and I must level with you, I must level with the British public: many more families are going to lose loved ones before their time." The next day, the UK Government Chief Scientific Adviser Sir Patrick Vallance said the government's tactic to allow the population to gradually develop "herd immunity" against COVID-19 would mean that 60% of the population would become infected⁴. People with symptoms are no longer required to call NHS 111, as the system is under strain, but are instead urged to look for information on the NHS website and 111 online.

More than 200 scientists and workers have put forward critical opinions of this strategy, and hold that, at present, the epidemic situation in Britain is basically the same as that in several European countries with serious conditions. The government should take measures to immediately isolate infected patients; otherwise, the lives of countless people will be threatened. Attempting herd immunity at this point does not appear to be a viable option, as this will put even greater strain on the NHS, risking many more lives than necessary.

As of 2018, there were 66.49 million people in the UK. Among them, the elderly account for 12 million, close to 20% of the population; this demographic is expected to reach 23% of the total population by 2035. During the present outbreak of SARS-CoV-2, the mortality rate of the elderly has been found to be very high; thus, if the virus is not controlled and is allowed to spread, the elderly will suffer. As of March 16, 27,980 cases had been confirmed in Italy, of which 2,158 infected patients have died. The mortality rate reached 7.7%, far exceeding the world average of 3.7%. If 3.7% is considered to be the mortality rate of COVID-19, 2.46 million people will die in the UK if no treatment is available to infected patients, and the vast majority of deaths are estimated to be among the elderly.

On March 16, Professor Li Lanjuan, a member of the high-level expert group of the National Health Commission, discussed herd immunization. She believes that some countries raising the idea of herd immunity in the face of the COVID-19 epidemic are irresponsible to the public. China's experience in combating the epidemic is worthy of study by other countries.

In all, we do not believe that herd immunity is feasible until a vaccine against the virus is developed.

Conflict of Interest

The Authors declare that they have no conflict of interests.

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