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The impact of imported cases on the control of COVID-19 in China. (Chinese. English summary) Zbl 07494965

Summary: To control the outbreak of COVID-19, the Chinese government has been carrying on a series of joint prevention and control measures. Current domestic situation shows an encouraging sign of improvement. However, the situation abroad is in a serious phase. Therefore, interdicting abroad inputs will be the key point at the next stage. In this paper, we establish a dynamical model incorporating with impulse to describe the transmission of SARS-CoV-2 and analyze the impact of overseas inputs on domestic prevention and control. Considering the imported cases from a typical neighboring country, we study the impacts of control measures under three different levels of control strategy. The simulations for the provinces with risk are given. The numerical experiments show that the current epidemic prevention policy can control the development of the epidemic well in the areas with less imported population; for the provinces with more imported population from the epidemic area, the effective screening and necessary isolation at immigration ports are crucial for preventing the further outbreak caused by imported cases.

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