



Zoo: An Ignored Area for Outbreak of COVID-19

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Editorial

Since December 2019, a total of 49,912 cases of COVID-19 have been confirmed in Wuhan city, Hubei Province, China. Most of the patients in the early stage seemed to have a relationship with a local fish and wild animal market, while others not. The current spread trend in China is approaching the end, but it is increasing in other countries.

Recent study showed that SARS-CoV-2 and SARS-CoV has common ancestors, and bats were also identified as original host for SARS-CoV-2. But there was no confirmed evidence for potential intermediate hosts or source of patient zero.

With the increase of submitted complete genomes of COVID-19 samples from GISAID, NCBI and NMDC, bioinformatics gave some clues. Through analyzing 97 complete genomes of COVID-19 samples and inferring their evolutionary relationships based on genomic variants, Zhang et al. [1] suggested that COVID-19 strains form two well-supported clades (Type I, and Type II). Their results suggested the outbreak of type II COVID-19 likely occurred in the Huanan seafood market, while the initial transmission of the type I virus to humans probably occurred at a different location in Wuhan.

As COVID-19 was obviously related to Huanan market, most people considered eating wild animals as the major cause. The government of China has already made stricter laws to prohibit people from eating wild animals. But eating wild animals was not the only way to contact wild animals for the moment. Zoos might be the main way for people to contact wild animals. In some ways, Zoos are more dangerous than eating.

Malayan Pangolins are endangered animals in urgent need of protection and were considered as potential intermediate hosts for SARS-CoV-2 [2]. Some smuggled Malayan Pangolins could be rescued by the wildlife rescue center and traditionally sent to Zoos later. Other potential intermediate hosts for SARS-CoV-2 may exist in Zoos also, and all of these supplied favorable conditions for transmission of SARS-CoV-2.

For example, Wuhan Zoo was about 10 km to Huanan seafood market. We supposed that one or some staffs in Zoo usually purchased food from Huanan seafood market for business or personal reasons, and these staffs rarely contact other people at work. If one of them was infected by SARS-CoV-2, it is possible to cause outbreak in Huanan seafood market without infecting people out of Huanan seafood market.

Although this is a bold imagination without any proofs, we hope the government and researchers could take Zoos into their account to explain the mystery of SARS-CoV-2.

References

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