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Pharmacokinetic interactions between the potential COVID-19 treatment drugs lopinavir/ritonavir and arbidol in rats

Key words: Pharmacokinetic interactions; Lopinavir/ritonavir; Arbidol

Research Summary

- **This correspondence mainly focused on the pharmacokinetic interactions between the potential COVID-19 treatment drugs lopinavir/ritonavir (LPV/r) and arbidol in rats.**
- **COVID-19 has spread rapidly over most of the world. In the absence of proven treatment protocols, antiviral drugs such as LPV/r and arbidol, are being administered in combination in some hospitals of China.**
- **Ritonavir is an inhibitor of CYP3A4, while lopinavir and arbidol are CYP3A4 substrates. Therefore, interactions between LPV/r and arbidol will probably increase the exposure to lopinavir or arbidol, which may enhance the risk of drug toxicity.**

Innovation points

- **Lopinavir/ritonavir significantly increased the AUC of arbidol.**
- **Arbidol significantly increased the C_{max} of lopinavir.**
- **Appropriate dose adjustment is recommended when LPV/r and arbidol are administered concurrently, and the dose of arbidol may need to be halved.**

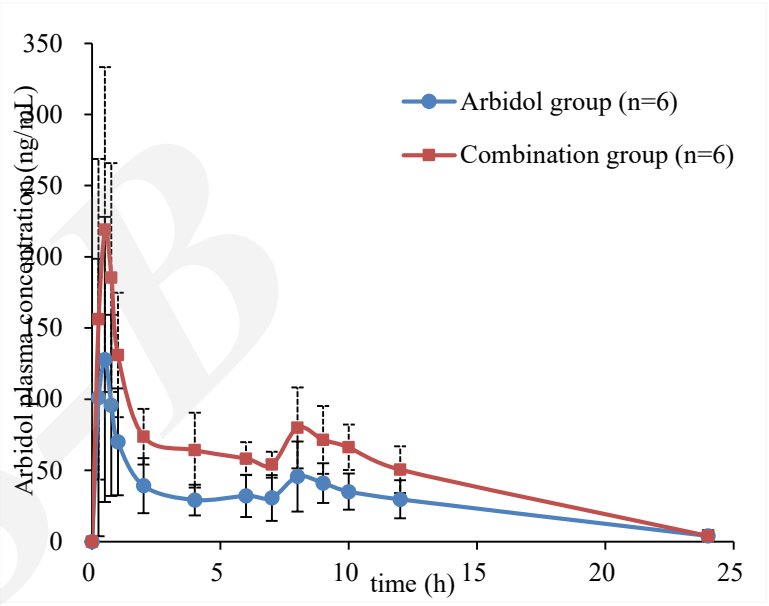

Fig. 1

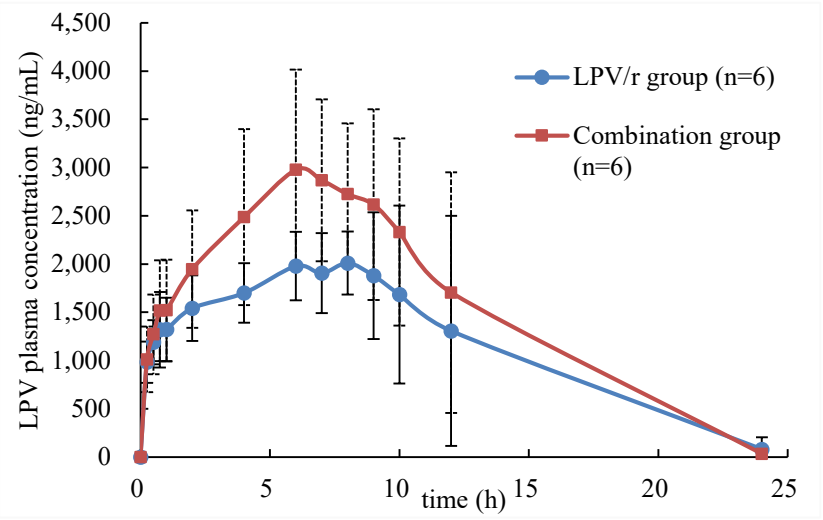

Fig. 2

Innovation points

Two tables were generated to summarize the pharmacokinetic parameters of arbidol and lopinavir

Table 1 | Pharmacokinetic parameters of arbidol after oral administration of arbidol or coadministration of arbidol and LPV/r in rats.

Table 2 | Pharmacokinetic parameters of lopinavir after oral administration of LPV/r or coadministration of LPV/r and arbidol in rats.