

Prevalence, management and risk factors of potential drug-drug interactions with Nirmatrelvir/Ritonavir for Coronavirus disease treatment in a tertiary care hospital: A reality check

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ABSTRACT

Introduction: Coronavirus disease 2019 (COVID-19) patients treated with nirmatrelvir/ritonavir (Paxlovid®) has risk of potential drug-drug interactions (pDDI) due to ritonavir's effects on cytochrome P450 3A4. This poses a challenge in COVID-19 treatment. This study aimed to determine the prevalence, management and risk factors of pDDI between Paxlovid® and concomitant drugs in COVID-19 patients. **Materials and Methods:** This cross-sectional study involved COVID-19 patients aged ≥18 years, treated with Paxlovid® between July and September 2022 in Hospital Tengku Ampuan Rahimah. Data sources were Paxlovid® treatment assessment forms and prescriptions. The pDDI was classified as do not co-administer, potential interaction, potential weak interaction, or no interaction using established resources. The pDDI management was classified as withhold, dose reduction, monitoring, and no action. Patient characteristics were analysed descriptively. Binary logistic regression was used to identify pDDI risk factors. **Results:** In 189 patients, mean age (years)±SD was 56.76±18.68, with most treated as inpatient (n=140, 74.07%). X-ray changes, immunocompromise, comorbidity, and polypharmacy were observed in 58 (30.69%), 22 (11.64%), 147 (77.78%), and 73 (38.62%) patients, respectively. The prevalence of pDDI with Paxlovid® was 60.32% (n=114) in 197 concomitant drug entries. The pDDI classified as do not co-administer, potential interaction, and potential weak interaction involved 10.15% (n=20), 77.16% (n=152), and 12.69% (n=25) drug entries, respectively. The pDDI was managed by withhold, dose reduction, monitoring, and no action in 54.31% (n=107), 19.29% (n=38), 7.11% (n=14), and 19.29% (n=38) drug entries, respectively. Age (OR 1.04; 1.02-1.06; p=0.001), comorbidity (OR 8.87; 3.17-24.78; p<0.001), and polypharmacy (OR 6.76; 2.74-16.65; p<0.001) were significant risk factors of pDDI with Paxlovid®. **Conclusion:** Prevalence of pDDI among COVID-19 patients treated with Paxlovid® was high, mainly managed by withholding concomitant drugs. Age, comorbidity, and polypharmacy were pDDI risk factors, warranting healthcare professionals to remain vigilant and proactive in identifying and managing pDDI to optimise treatment with Paxlovid®.