

Early treatment of hospital - onset COVID-19 in high-risk inpatients

Background

Evidence suggests that treatment with antivirals significantly improve clinical outcomes in patients with COVID-19 who are at high risk of progression to severe disease and/or death. At risk patients with COVID-19, who are currently hospitalised for other reasons, should be considered for these treatments in line with the criteria outlined in this guideline.

Criteria

Patients must meet **all of the eligibility criteria** and **none of the exclusion criteria**

This pathway also applies to patients with community-onset COVID-19 who have been admitted for other reasons (within 5 – 7 days of symptom onset) and who meet the eligibility criteria below.

Eligibility criteria
COVID_19 infection is confirmed by PCR or LFT testing
AND
Hospitalised for indications other than for the management of acute symptoms of COVID-19 ¹
AND
Symptomatic with COVID-19 and showing no signs of clinical recovery
AND
The patient is a member of the "highest risk" group (see here for definitions) OR COVID-19 infection presents a material risk of destabilising a pre-existing condition or illness or compromising recovery from surgery or other hospital procedure (as determined by MDT assessment)
Exclusion criteria
<ul style="list-style-type: none">• Known hypersensitivity reaction to the active substances or to any of the excipients of the products as listed in the Summary of Product Characteristics (SmPC)• Require hospital-level care for the management of acute Covid-19 illness• New supplemental oxygen requirement specifically for the management of COVID

¹This includes patients admitted to community and mental health hospitals. Where possible patients being considered for intravenous treatment should be transferred to a suitable facility for treatment delivery.

Summary of Treatments

	Treatment	Treatment window
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1st line	Paxlovid® 300mg/100mg BD for 5 days ² <i>Contains nirmatrelvir plus ritonavir Antiviral</i>	Start within 5 days of symptom onset <i>(this may be extended to 7 days if clinically indicated but prescribing will be off-label.)</i>
2nd line	Remdesivir IV 200mg day 1, 100mg OD on day 2 and 3 (total 3 days)	Start within 7 days of symptom onset

²See section below for guidance on renal dosing.

If patient's are unable to receive Paxlovid® or remdesivir – contact microbiology for advice

Drug Interactions

Check the Liverpool drug interaction resource via the following link: [Liverpool COVID-19 Interactions \(covid19-druginteractions.org\)](https://www.liverpooldruginteractions.org/covid19-druginteractions.org)

If an interaction is identified, please consider:

- Can concomitant medication(s) be temporarily discontinued?
- Can the dose of the concomitant medication(s) be reduced?
- Can an alternative concomitant medication be used?
- Can increased monitoring for adverse effects or concomitant medication drug levels be done?

For further advice – see the [Paxlovid decision aid](#) which contains additional advice on management of common *drug-drug* interactions. More information is available via the [Paxlovid SPC](#).

IMPORTANT: Paxlovid® has a risk of serious adverse reactions due to interactions with other medicinal products. These interactions may lead to:

- Clinically significant adverse reactions, potentially leading to severe, life-threatening or fatal events from greater exposures of concomitant medicinal products.
- Clinically significant adverse reactions from greater exposures of Paxlovid®
- Loss of therapeutic effect of Paxlovid® and possible development of viral resistance

Ensure that all potential interactions are carefully considered, seeking specialist advice as needed.

Dosing in renal and hepatic impairment

Drug	Advice								
Antivirals									
Paxlovid®	<p>Renal Impairment:</p> <table border="1"> <thead> <tr> <th>eGFR greater than 60mL/min</th> <th>eGFR 30 to 60mL/min</th> <th>eGFR <30mL/min including End Stage Renal Disease patients receiving Haemodialysis or Peritoneal Dialysis</th> <th>Patients taking tacrolimus, ciclosporin or sirolimus (all levels of kidney function)</th> </tr> </thead> <tbody> <tr> <td>Normal dose Paxlovid® 300mg nirmatrelvir plus 100mg ritonavir BD</td> <td>Reduce dose to 150mg nirmatrelvir plus 100mg ritonavir BD</td> <td>Reduce dose to 150mg nirmatrelvir plus 100mg ritonavir BD</td> <td>Paxlovid® prescribing contraindicated</td> </tr> </tbody> </table> <p>Hepatic impairment or raised liver enzymes:</p> <p>Advice from the WMIC paxlovid decision aid states:</p> <p>Advice from clinical experts is that Paxlovid® may be used where ALT is raised, up to twice the upper limit of normal reference range. Individuals should be advised that if they experience any right upper quadrant pain, they should stop taking Paxlovid® and seek medical advice.</p> <p>If ALT is raised, up to 1.5 times the upper limit of normal range AND the bilirubin is also raised, Paxlovid® should be avoided</p> <p>Patients with cirrhosis of the liver may be prescribed Paxlovid® providing they do not have jaundice or a significantly raised bilirubin level, clotting abnormalities or ascites.</p> <p>No dosage adjustment of Paxlovid is needed for patients hepatic impairment. Not recommended for use in advanced decompensated liver cirrhosis.</p>	eGFR greater than 60mL/min	eGFR 30 to 60mL/min	eGFR <30mL/min including End Stage Renal Disease patients receiving Haemodialysis or Peritoneal Dialysis	Patients taking tacrolimus, ciclosporin or sirolimus (all levels of kidney function)	Normal dose Paxlovid® 300mg nirmatrelvir plus 100mg ritonavir BD	Reduce dose to 150mg nirmatrelvir plus 100mg ritonavir BD	Reduce dose to 150mg nirmatrelvir plus 100mg ritonavir BD	Paxlovid® prescribing contraindicated
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Remdesivir	No dose adjustment is recommended in patients with renal or hepatic impairment.								

Prescribing Paxlovid®

Clinicians should assure themselves that patients are able to swallow the oral tablets. Paxlovid® is provided as separate tablets for each of the drug components, co-packaged in one container. To prevent administration errors it is important that the drug is prescribed clearly:

On the e-prescribing system, search for "Paxlovid" under the protocol tab.

When handwriting prescriptions for Paxlovid®:

- Prescribe in the finalised section (page 3) of the antimicrobial section of the inpatient medication chart so that 5 days administration is possible
- State the brand name (Paxlovid®) and generic name (Nirmatrelvir/ritonavir) of the drug
- State the dose in mg of Nirmatrelvir first followed by the mg dose of ritonavir.

A medication safety alert is available on COIN via this [link](#) and may be printed to alert nursing staff to the risk of errors.

Example prescription of Paxlovid® 300mg/100mg twice a day:

FINALISED PRESCRIPTION			Antimicrobial – Finalised Prescription				Duration OR review date:		PREScriBER'S SIGNATURE	PHARMACIST	Discharge Prescription
Check for allergies			Paxlovid				5 days		Dr.	SUPPLY	TOTAL duration
DATE →	09/02		Indication				Rationale for Choice (circle)				
ROUTE →	PO		COVID-19				Guidelines, Micro advice/C&S				
SPECIFY TIME IF REQUIRED ↓	DOSE ↓	SIGN ↓	DATE					Prescription will stop here unless you prescribe again	Administration must follow the date line provided for EACH separate prescription		
		DOSE CHANGE ↓	DAY	1					Special instructions		
Morning	300mg / 100mg								Nirmatrelvir and ritonavir		
Midday											
Evening											
Bedtime	300mg / 100mg										

Paxlovid® has significant interactions and so the safety of treatment must be carefully considered using the [Liverpool interaction checker](#), and discussion with speciality teams as needed (see the interaction section for more information).

Patients should be advised of the possible gastro-intestinal side-effects of treatment with nirmatrelvir/ritonavir (e.g. nausea, vomiting). If such side-effects are experienced, anti-emetics should be considered that are not contra-indicated. If nirmatrelvir/ritonavir treatment cannot be tolerated, an alternative treatment can be considered. Combination treatment should not be provided

Pregnancy and women of childbearing age

See SmPC for information: [Paxlovid](#) or [Remdesivir](#)

References

- [NICE TA878](#)
- [NICE TA971](#)
- [WMIC paxlovid decision aid](#)
- [Summary of product characteristics](#)

Last updated: June 2024