

Administration in Cases of Swallowing Difficulties

Updated 7 November 2022

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Please check www.covid19-druginteractions.org for updates.

No recommendation to use experimental therapy for COVID-19 is made.

Data for many agents are limited or absent; therefore, risk-benefit assessment for any individual patient rests with prescribers.

COVID-19 Antiviral Therapies (Licensed or Under Clinical Investigation)

Drug	Formulation	Comments
Bamlanivimab/ Etesevimab	IV	IV formulation – recommendations for swallowing difficulties are not applicable.
Bebtelovimab	IV	IV formulation – recommendations for swallowing difficulties are not applicable.
Casirivimab/ Imdevimab	IV	IV formulation – recommendations for swallowing difficulties are not applicable.
Favipiravir	Tablets	Tablets can be crushed and mixed with liquid. (<i>Sissoko D, et al. PLoS Med, 2016, 13(3):e1001967.</i>)
Molnupiravir	Capsules	Capsules should be swallowed whole with a sufficient amount of fluid (e.g., a glass of water). The capsules should not be opened, crushed or chewed. (<i>Lagevrio Summary of Product Characteristics, Merck Sharp & Dohme Ltd.</i>)
Niclosamide	Various	Oral, intramuscular, inhaled and intranasal formulations are being studied for COVID-19. Niclosamide tablets can be crushed or disintegrated in a little water; some clinical trials allow for the administration of niclosamide by feeding tubes.
Nirmatrelvir + ritonavir	Tablets	Product labels for Paxlovid state nirmatrelvir and ritonavir tablets should be swallowed whole and not chewed, broken or crushed (<i>Paxlovid Summary of Product Characteristics, Pfizer Ltd; Paxlovid FDA Emergency Use Authorization, Pfizer Inc.</i>) However, pharmacokinetic data from phase 1 studies with nirmatrelvir (<i>Singh RSP, et al. Clin Pharmacol Ther 2022; 112:101-111</i>) and crushed lopinavir/ritonavir tablets used in hospitalized COVID-19 patients (<i>Mohsenian Naghani SM, et al. Eur J Hosp Pharm 2021; ejhpharm-2020-002596</i>) suggest that nirmatrelvir and ritonavir tablets can be crushed or split and mixed with food or liquid, including dairy-containing products. Crushed tablets mixed with water can also be considered for administration via feeding tubes (tube should be flushed with water after administration). Due to lack of information pertaining to stability, it is recommended that any suspension made with crushed nirmatrelvir and ritonavir be consumed immediately. (<i>This does not replace clinical judgement. An alternative COVID-19 treatment should be considered if crushing or administration of nirmatrelvir and ritonavir solutions are deemed inappropriate.</i>)
Nitazoxanide	Tablets	The US Prescribing Information makes no recommendation for or against crushing tablets.
	Oral solution	Nitazoxanide powder should be reconstituted with water and may be stored for 7 days at room temperature. (<i>Alinia US Prescribing Information, Romark Pharmaceuticals.</i>)
Remdesivir	IV	IV formulation – recommendations for swallowing difficulties are not applicable.
Sotrovimab	IV	IV formulation – recommendations for swallowing difficulties are not applicable.
Tixagevimab/ Cilgavimab	IV	IV formulation – recommendations for swallowing difficulties are not applicable.

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COVID-19 Host-directed Therapies (Licensed or Under Clinical Investigation)

Drug	Formulation	Comments
Anakinra	SC	SC administration – recommendations for swallowing difficulties are not applicable.
Baricitinib	Tablets	Product labels make no recommendation for or against crushing tablets.
Budesonide	Inhaled	Inhaled formulation – recommendations for swallowing difficulties are not applicable.
Canakinumab	SC	SC administration – recommendations for swallowing difficulties are not applicable.
Dexamethasone	Tablets	Some manufacturers recommend that tablets should be swallowed whole (e.g., <i>Dexamethasone Summary of Product Characteristics, Consilient Health Ltd</i>). Some tablets can be divided (e.g., <i>Dexamethasone Summary of Product Characteristics, Advanz Pharma</i>), though tablet pieces may not be stable and should be discarded if not taken immediately (e.g., <i>Neofordex Summary of Product Characteristics, Aspire Pharma Ltd</i>).
	Other	Soluble tablets, oral solutions, and solutions for injection or infusion are available for patients with swallowing difficulties. <ul style="list-style-type: none"> Some tablets may disperse in water; the dispersion settles quite quickly but flushes down an 8Fr NG tube without blocking (<i>Handbook of Drug Administration via Enteral Feeding Tubes, 2015</i>). Oral solutions contain propylene glycol and some manufacturers recommend administration with silicone, PVC or polyurethane NG or PEG tubes only (e.g., <i>Dexamethasone Summary of Product Characteristics, Rosemont Pharmaceuticals Ltd</i>). Dexamethasone has reported incompatibilities and it is not recommended to mix remdesivir and dexamethasone together in the same IV infusion bag if coadministration is required. Dexamethasone sodium phosphate is physically incompatible with daunorubicin, doxorubicin and vancomycin and should not be mixed with solutions containing these drugs. It is also incompatible with doxapram HCl, glycopyrrolate, midazolam, prochlorperazine and promethazine in syringe (<i>Murney P. Aust Prescr, 2008, 31:98-101</i>).
Fluvoxamine	Tablets	Fluvoxamine tablets can be divided into equal halves and should be swallowed with water and without chewing.
Hydrocortisone	Tablets	Formulations for injection or infusion are available for patients with swallowing difficulties.
Imatinib	Tablets	Tablets may be dispersed in a glass of still water or apple juice. The required number of tablets should be placed in the appropriate volume of beverage (approximately 50 ml for a 100 mg tablet, and 200 ml for a 400 mg tablet) and stirred with a spoon. The suspension should be administered immediately after complete disintegration of the tablet(s). (<i>Glivec Summary of Product Characteristics, Novartis Pharmaceuticals</i> , <i>Gleevec US Prescribing Information, Novartis Pharmaceuticals</i> .)
Infliximab	IV or SC	IV or SC administration – recommendations for swallowing difficulties are not applicable.
Methylprednisolone	Tablets	Formulations for injection or infusion are available for patients with swallowing difficulties.
Ruxolitinib	Tablets	The US Prescribing Information states that for patients unable to ingest tablets, ruxolitinib can be administered through a nasogastric tube (8 French or greater) as follows: <ul style="list-style-type: none"> Suspend one tablet in ~40 mL of water with stirring for approximately 10 minutes. Within 6 hours after the tablet has dispersed, the suspension can be administered through a nasogastric tube using an appropriate syringe. The tube should be rinsed with ~75 mL of water. The effect of tube feeding preparations on ruxolitinib exposure during administration through a nasogastric tube has not been evaluated. (<i>Jakafi Prescribing Information, Incyte Corporation</i> .)
Sarilumab	SC	SC administration – recommendations for swallowing difficulties are not applicable.
Tocilizumab	IV or SC	IV or SC administration – recommendations for swallowing difficulties are not applicable.