





COST ANALYSIS OF REMDESIVIR AND NIRMATRELVIR/RITONAVIR FOR THE EARLY TREATMENT OF COVID19 VULNERABLE PATIENTS

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Why are we still talking about COVID-19?

Despite the end of the global health emergency, there is a vulnerable segment of the population that is at increased risk of developing the severe form of COVID-19. To avoid this, two antiviral drugs can be used for the



REMDESIVIR

• 3-days therapy

• Patients with CKD

- Intravenous administration Oral administration
 - - 5 days therapy
 - Many drug interactions

NIRMATRELVIR/RITONAVIR

early treatment of the disease.

Objective

The objective of this study is to carry out a cost analysis between the two therapies used in the early treatment of severe COVID-19, considering their efficacy in preventing hospitalisation and serious adverse events, their ex-factory price and the costs necessary for administration. Finally, a Budget Impact Analysis was performed on the reality of the University Hospital of Padua.

Methods

NETWORK META-ANALYSIS OF EFFICACY AND SAFETY

Systematic review of Zur et al. RR of hospitalization and serious adverse events

COST ANALYSIS

Ex-factory price COVID-19 hospitalization cost Serious adverse events cost Hospital setting cost for administration (bottom-up approach)

SCENARIOS

Scenario A: 1.000 patients with remdesivir

Scenario B: 1.000 patients with nirmatrelvir/ritonavir

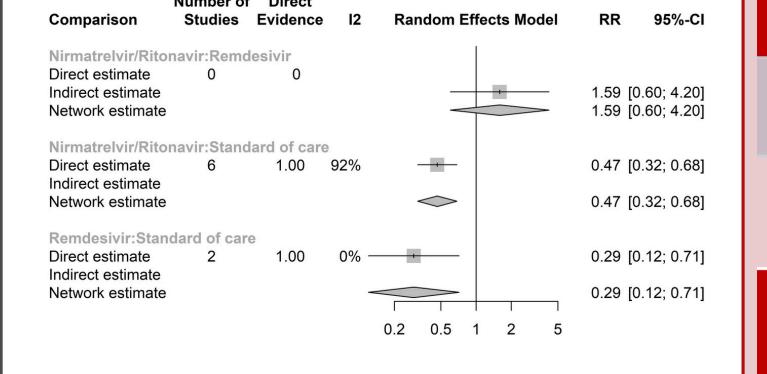
BUDGET IMPACT ANALYSIS

Prescription of aearly treatment for COVID-19

Main results

NETWORK META-ANALYSIS

Risk Relative for Hospitalization



Risk Relative for Adverse events

Comparison	Number of Studies	Direct Evidence	Random Effects Model	RR	95%-CI
Nirmatrelvir/Rito	navir:Remo	lesivir			
Direct estimate	0	0	× 1		
Indirect estimate				0.92 [0	0.31; 2.74]
Network estimate				0.92 [0	0.31; 2.74]
NI:	. 01	lI - 6			
Nirmatrelvir/Rito	navir:Stand		_	0.04.50	. 45 0 441
Direct estimate	1	1.00		0.24 [0	0.15; 0.41]
Indirect estimate				0.04 [0	16.0441
Network estimate				0.24 [0	0.15; 0.41]
Remdesivir:Stan	dard of car	9			
Direct estimate	1	1.00 -		0.27 [0	0.10; 0.70]
Indirect estimate	•		_	0.2. [
Network estimate		-		0.27 [0	0.10; 0.70]
			0.2 0.5 1 2 5		

TIME-FLOW FOR REMDESIVIR ADMINISTRATION

PATIENT INTAKE

Preparation: Reception: Nurse: 5 minutes Secretary: 5 minutes Clinician: 10 minutes

DRUG PREPARATION

Prescription and drug check: Infusional drug preparation: Nurse: 5 minutes Pharmacist: 5 minutes

DRUG ADMINISTRATION

Preparation Administration: administration: Nurse: 30 minutes Nurse: 5 minutes

COST ANALYSIS

COST	SCENARIO A (Remdesivir)	SCENARIO B (Nirmatrelvir-Ritonavir)	DIFFERENCE
EX-FACTORY PRICE	1.840.000,00€	1.336.290,00€	503.710,00€
ADMINISTRATION	76.140,00€	-	76.140,00€
HOSPITALIZATION	58.186,01€	92.515,75€	- 34.329,74 €
SERIOUS ADVERSE EVENTS	66.677,50€	61.343,30€	5.334,20€
TOTAL	2.041.003,51€	1.490.149,05€	550.854,46€

BUDGET IMPACT ANALYSIS

Patients in early treatment for COVID-19 from october 2023 to september 2024 in University Hospital of Padua



383 Remdesivir + 493 Nirmatrelvir/Ritonavir Total = 876 patients



Saving estimated for one year of only Nirmatrelvir/Ritonavir treamtnet Saving: **€ 210.977,25**

Conclusioni

 Nirmatrelvir/Ritonavir save €550.854,46 each 1.000 patients in comparison with remdesivir

impact

•In one year University Hospital of Padua could save € 210.977,25

Budget

Limits



TAKE HOME MESSAGE

When the choice between remdesivir and nirmatrelvir/ritonavir is possible, nirmatrelvir/ritonavir is costeffectiveness

Main result

•No patients with CDK •More selection of

patients analyzed in study to estimate Efficacy and safety

Drug interaction

Bibliografia

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