

Impact of domiciliary administration of NSAIDs on COVID-19 hospital outcomes: An unCoVer analysis

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Background

Domiciliary treatment can limit the progression of COVID-19 in the early phase of disease and consequently the pressure on hospitals. Data on the use of nonsteroidal anti-inflammatory drugs (NSAIDs) in this phase are still discrepant. UnCoVer (Unravelling data for rapid evidence-based response to COVID-19) is a project funded by the European Commission within the Horizon 2020 framework, aiming to provide a research platform for the expert use of real-world data (RWD) originating from different countries.

Fig.1 Geographical distribution of countries in the unCoVer network



Aims

- Primary objective** was to evaluate whether domiciliary treatment with NSAIDs might be associated with a lower mortality in individuals with COVID-19.
- Secondary objectives** were:
 - to evaluate the influence of age, sex and comorbidities;
 - to evaluate if domiciliary treatment with oral steroids and antibiotics might be associated with a lower mortality in individuals with COVID-19.



Materials and Methods

Multicentric observational study. All data present in the unCoVer platform, originating from patients hospitalized for COVID-19 from March 2020 to March 2023 were deemed eligible. The association between home medication with NSAIDs or other home medication and hospital outcome was explored using a study level random effects meta-analysis for binary (multivariate logistic regression models) outcomes adjusted for selected factors.

Results

1,273 patients were included. NSAIDs use before hospital admission was not associated with patients' outcome during hospitalization (unadj. OR: 0.96, 95%CI: 0.68-1.38). Increasing age and male sex were independently associated with an upward risk of death: OR 1.06 (95% CI 1.05-1.07), and 1.36 (95% CI 1.04-1.76), respectively.

Table 1. Association of demographics, underlying conditions, and domiciliary treatment with patient in-hospital death.

Parameter	Pooled estimate	
	OR	95% CI
Comorbidity, 1 (Ref. 0)	0.64	0.24 - 1.72
Comorbidity, 2 or more (Ref. 0)	1.23	0.89 - 1.70
Age, ys	1.06	1.05 - 1.07
Gender, Male (Ref. Female)	1.36	1.04 - 1.76
Antibiotic use, Yes (Ref. No)	0.79	0.57 - 1.11
ACE inhibitors use, Yes (Ref. No)	0.95	0.72 - 1.25
NSAIDs use, Yes (Ref. No)	1.11	0.74 - 1.65
Oral steroids use, Yes (Ref. No)	1.11	0.68 - 1.77

OR, Odds Ratio.CI, Confidence Intervals. ACE, Angiotensin-converting enzyme. NSAIDs, Non-steroidal anti-inflammatory drugs.

Conclusion

- Domiciliary treatment with either NSAIDs or other considered drugs (oral steroids and antibiotics) did not influence the patient clinical outcome.
- An increased risk of death was instead associated with older age and male sex.
- The domiciliary use of NSAIDs seems to be appropriate to treat. symptoms due to SARS-CoV-2 infection, but they would not be recommended *per se* in case of SARS-CoV-2 infection.

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