



Research Article

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COVID-19 Early Treatment with Non-Steroidal Anti-Inflammatory Drugs Reduces Hospitalizations and Symptom Duration

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Background

At the beginning of the SARS-CoV-2 pandemic we stated that, given the new virus and the little-known disease it caused, in the absence of Evidence-Based Medicine indications, patients should have been treated with drugs already available, useful to counteract the pathophysiology of the COVID-19 [1]. Recent literature has confirmed that this could be a successful approach, demonstrating that an early treatment with nonsteroidal anti-inflammatory drugs (NSAIDs), in patients with mild-to-moderate COVID-19, produces significant reduction of hospitalizations and disease duration [2-4]. The NSAIDs have indication in the COVID-19 not only for their anti-inflammatory actions but also, some molecules, for their antiviral properties [2,3,5].

Aim and Scope

The aim of this study was to verify whether a prompt home treatment with NSAIDs could reduce hospital admissions and disease duration in patients with mild-to-moderate COVID-19.

Methods

This multicenter retrospective observational study was performed by analyzing the data of 966 Italian unvaccinated patients (age ≥ 18 years) with mild-to-moderate confirmed COVID-19. The data were collected from February to December 2021 by some physicians, members of the "terapia domiciliare COVID-19" (an Italian group founded by lawyer Erich Grimaldi to assist people with COVID-19). The protocol was approved by the ethical committee of the ASL Napoli 2 and all the patients provided written informed consent. According to a previous observation [2], the 966 patients (539 females), mean age ± SD 45 ± 14, were divided into two groups: Group 1 consisted of 561 patients who started the therapy within the first 72 hours from onset of symptoms, Group 2 included 405 patients, who, were referred later and started therapy after 72 hours. All patients had an initial treatment with a NSAID (Ibuprofen 40%, Aspirin 26%, Indomethacin 18%, Nimesulide 11%, Ketoprofen 5%). When appropriate, for those whose clinical condition worsened, cortisone was added, and/or a prophylactic

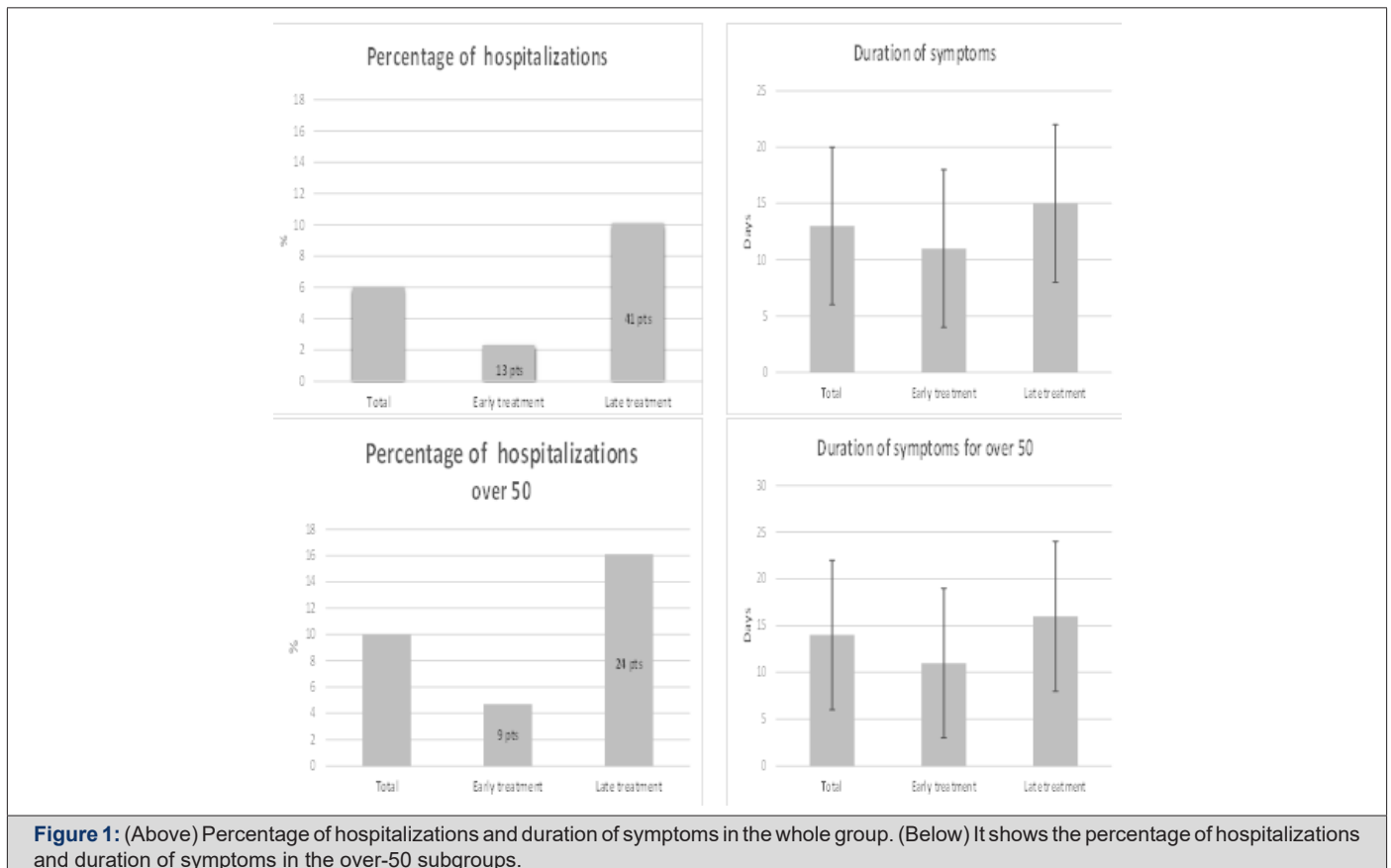
dose of low molecular weight heparin and/or antibiotics. From the whole group, a subgroup of 339 over-50-year-old patients (over-50) with a mean age \pm SD of 60 \pm 9 years (183 females) was selected. It was divided in: Subgroup 1 of 190 patients who started the therapy within the first 72 hours and Subgroup 2 of 149 pts who started later.

Descriptive statistics (mean values and standard deviation) were used to measure the central tendency and dispersion of the data. The dataset was analyzed by considering all the subjects recruited and the subgroup over-50, according to the time of starting the therapy: within or after 72 hours, respectively, named as "early treatment" and "late treatment". To compare the difference between the subgroups for anthropometric parameters and comorbidities, the non-parametric Mann-Whitney U test was used, assuming a significance level of $p = 0.05$. The chi-square test was adopted to compare the differences between hospitalizations. Stat

view software was used to perform statistical analysis.

Findings

We analyzed the data from the whole group of 966 pts and the subgroup of 339 over-50. The data analysis showed that the two groups and the two over-50 subgroups were not significantly different for age, sex distribution, BMI and comorbidities. The results show a significant reduction in the number of hospitalizations in Group 1 as compared to Group 2 (13 vs 41, $p < 0.0001$) and between the two over-50 subgroups (9 vs 24, $p < 0.001$), showing a reduction of hospital admissions of 68 and 63 %, respectively (Figure 1). Furthermore, there was a reduction of disease symptom duration from 15 to 11 days and from 16 to 11 days, respectively (Figure 1). Early treatment with indomethacin and nimesulide produced zero hospitalizations. A total of 6 hospitalized patients died: 5 in the Group 2 and only one in the Group 1, all among the over-50.



Discussion

This study clearly shows that a prompt therapy with NSAIDs, started within 72 hours of the onset of symptoms, reduces the number of hospitalizations and the disease symptoms duration

in patients with mild-to-moderate COVID-19. Although it is an observational retrospective study, these results confirm, in a larger population, the ones reported by a previous study [2], and, importantly, the reductions of hospitalizations and symptom duration were also confirmed in the over-50 subgroup.

In most western countries, at the beginning of the SARS-CoV-2 pandemic, a “watchful waiting” attitude and/or a symptomatic treatment were indicated for patients with mild-to-moderate COVID-19: this approach might have resulted in the largest number of hospitalizations. Further prospective controlled studies are needed to confirm these findings and to verify whether, among the different NSAIDs, there is one that could give better outcomes.

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