NIRMATRELVIR-RITONAVIR TREATMENT IN CHILDREN WITH SARS-COV-2 INFECTION

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BACKGROUND

Children seem to experience a less severe form of COVID-19 disease than adults. Nevertheless, cases of severe infection have been described in a small proportion of patients, requiring hospitalization in 5-10% of cases. Among COVID-19 deaths, 0.4% occurred in children and adolescents under 20 years of age. Most hospitalized children with acute COVID-19 had underlying conditions. Moreover, some children with previous COVID-19 infection, may later develop Multisystem Inflammatory Syndrome in Children (MIS-C), a rare but serious condition associated with COVID-19. These data suggest that a specific therapy is necessary in high-risk pediatric population, in order to prevent severe COVID-19, especially in children with underlying conditions. Data on antiviral use in children are currently very limited.

METHODS

We conducted a retrospective study on patients <18 years of age who received Nirmatrelvir-Ritonavir for the treatment of mild-to-moderate COVID-19 at Bambino Gesù Children's Hospital in Rome from April 2022 to September 2022. Patients at high risk of progression to severe COVID-19 who had no need of supplemental oxygen, received Nirmatrelvir-Ritonavir according to Italian Medicines Agency's indications for adults after obtaining parent's informed consent.

Treatment with **Nirmatrelvir-Ritonavir** in **children** has proven to be ***safe.***
Only 5/40 children (12.5%) treated experienced some adverse reactions.

RESULTS

Forty patients aged 1-18 years with confirmed SARS-CoV-2 infection were treated with Nirmatrelvir-Ritonavir. Comorbidities are shown in Figure 1. The average symptom duration was 4.2 days. No patient developed severe COVID-19. All patients were treated within 5 days of symptom onset. Four (10%) patients received a longer course of treatment (10 days) due to the persistence of virus and symptoms, along with the presence of severe comorbidity. The mean time of viral shedding was 12.7 days, with a patient being persistently positive for 56 days. After antiviral treatment initiation, only 5 patients (12.5%) experienced adverse reactions (Table 1). In the two cases where vomiting occurred treatment was discontinued (2/40, 5%), while in the other three cases the 5-day treatment course was completed.

	Total (n=40)	0-6 years (n=15)	7-12 years (n=9)	13-18 years (n=16)
Adverse reactions	**5**	**1**	**2**	**2**
Nausea and vomiting	2	1	1	0
Increased Creatine Phosphokinase and triglycerides	1	0	1	0
Metallic taste	2	0	0	2
Treatment interruption	**2**	**1**	**1**	**0**

Table 1.

CONCLUSIONS

Treatment with Nirmatrelvir-Ritonavir has proven to be safe. Further pharmacokinetic studies are required, particularly in children under 5 years of age.

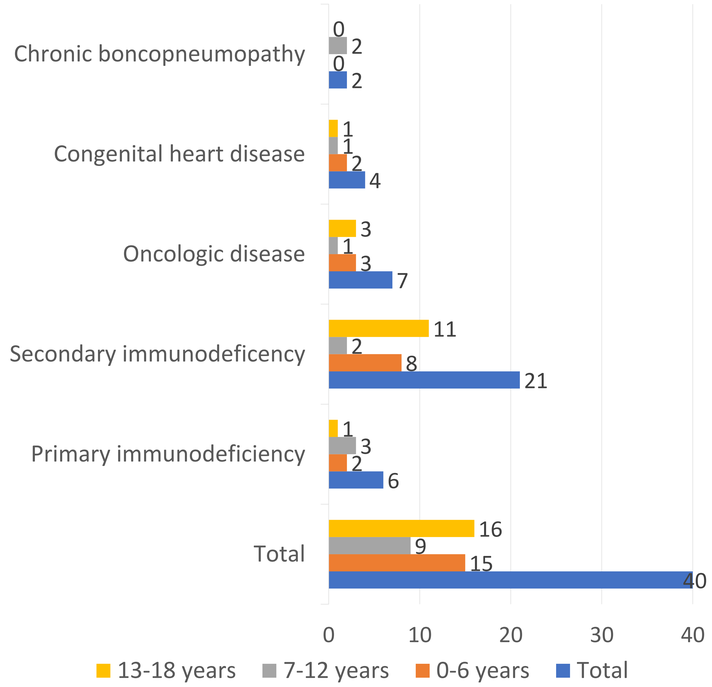

Figure 1

ADDITIONAL KEY INFORMATION

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