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Letter to the Editor

Management of Pediatric Rheumatological Diseases During the Outbreak of COVID-19: Our Experience

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To the editor.

Since the COVID-19 epidemic has evolved rapidly, also in Italy, specialists in pediatric rheumatology have found themselves addressing the problems of their patients and, in particular, how to manage the risk of infection and immunosuppressive treatment.

This work aims to make known the experience of our center.

Italy was the first nation in the European Union to be affected by the Coronavirus epidemic.

The global cases confirmed on May 11 are 3,976,043 in the world since the beginning of the epidemic, with a number of 277,708 deaths. The Italian epidemiological data updated to May 10 show a total of 83324 people currently positive, with 30560 dead and 105186 recovered.[1]

In Sicily, since the beginning of the checks, 102,403 checked swabs, out of 91,748 people: 3,327 were positive, while 2,069 are still infected, 1,002 have healed, and 256 died. Of the current 2,069 positives, 289 patients are hospitalized, including 16 in intensive care, while 1,780 are in home isolation.[2]

As regards pediatrics, it is now known that COVID-19 related disease is less frequent and less aggressive. In Italy, only about 1% of positive cases are under the age of 18, and no deaths have been recorded before the age of 29.[1]

From studies in pediatric patients, performed in China, it appears that children of all ages are potentially susceptible to COVID-19, no gender differences were found. The clinical manifestations of pediatric patients generally seem less severe than those of adult patients. However, young children, particularly infants, are found to be vulnerable to 2019-CoV infection.[3]

From a Chinese review, about 75% of children had a history of family contact with infected patients. The severity of the disease was mainly mild to moderate (98%), only 2% of children needed intensive care, fever occurred in 59% of patients, cough in 46%, gastrointestinal symptoms (diarrhea) were present in 12% of cases, 26% of children are asymptomatic. The most common radiographic finding is represented by frosted glass opacity (48%).[4]

Patients with rheumatological diseases are notoriously more prone to the risk of infection due to disease activity, comorbidity, and immunosuppressive therapy. On the other hand, from what reported by Zunyou Wu et al. in a court of 73.314 cases of covid-19 patients, none of the patients with fatal outcomes presented rheumatological diseases as comorbidities.[5]

This finding could be related to the immunosuppression of drugs generally used for their underlying disease, which would protect them from inflammatory complications of COVID-19.

We are a pediatric rheumatology center in southern Italy. We follow about 500 patients with rheumatological diseases (Juvenile Idiopathic Arthritis, autoinflammatory diseases, connectivitis, vasculitis) treated with corticosteroids, nonsteroidal anti-inflammatory drugs, immunomodulators, immunosuppressants and biological drugs (IL1-IL6-JAK inhibitors- Anti TNF- Anti CD20).

In a period of 3 months (from February to May), we found ourselves faced with this health emergency, and we had to change the approach towards our patients.

All patients were considered potentially at high risk infectious for which exceptional measures were put in place. Outpatient visits and elective hospitalizations were limited to those who were considered non-deferrable.

Hospital admission was guaranteed to patients with disease reactivation, with new diagnoses and with intravenous infusion therapy, accompanied by only one family member.

Patients on treatment with intravenous biological drugs were subjected to isolation even before the institutional lockdown.

According to the PReS (Paediatric Rheumatology European Association) recommendations for the

COVID-19 outbreak, we continued all the therapies as usually done, including methotrexate and biologics.

Patients receiving corticosteroids, where possible, underwent dose adjustment.

The use of ibuprofen in potentially infected patients was first discouraged,[6] especially since four cases of children in France that had taken ibuprofen experienced a worsening of the symptoms of COVID-19, so we have advised our patients not to take it in case of fever or pain.[7] Subsequently, WHO (World Health Organization) has withdrawn its previous warning against ibuprofen;[8] however, we prefer not to continue to administer it for the lack of evidence.

In the case of fever or suspected infection, we advised patients to refer to the pediatric Covid Centers; in the meantime, we suspended the methotrexate and assessed the continuation of biological drugs.

We carried out telephone consultations to patients who did not need an urgent visit, indicating to perform laboratory tests only if strictly necessary.

Concerning patients treated at home with hospital-dispensed drugs, access to only one family member was guaranteed directly at the hospital's pharmacy service, and where possible, home delivery of the drugs was activated thanks to the help of a pharmaceutical sensitive company.

The schedule of infusions, where possible, has been postponed for 1-2 weeks to ensure patient safety and isolation.

The patients for whom it was necessary to arrange a day or ordinary hospitalization, without symptoms suggestive of COVID-19 infection or recent contacts with infected people, had direct access to our locals without being stationed in common areas. They were placed in single rooms with the assistance of one dedicated nurse and one doctor only and equipped with individual protection devices and the rules of safety and compliance with hygiene rules (surgical mask, hand disinfection).

We encountered difficulties in obtaining hydroxychloroquine both in the territory and in the hospital, so some patients had to discontinue it.

The health authorities have recommended to modify, where possible, the route of administration of Tocilizumab from intravenous to subcutaneous.

To this date, none of our patients seem to have contracted Covid-19 infection; only one patient has been tested for suggestive symptoms and has tested negative.

We are evaluating how to resume our activities at the end of the institutional closure.

We are organizing our clinics by providing an hourly visit, thus guaranteeing social distancing. In conclusion, we can say that this management has proven effective in preventing Covid-19 infection in our patients.

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References:

1. Ministero della Salute Italiano Covid-19 - Situazione in Italia. http://www.salute.gov.it/portale/nuovocoronavirus/dettaglioContenutiNuovoCoronavirus.jsp?area=nuovoCoronavirus&id=5351&lingua=italiano&menu=vuoto
2. Regione Sicilia - Aggiornamento Coronavirus (11 maggio 2020). http://pti.regione.sicilia.it/portal/page/portal/PIR_PORTALE/PIR_ArchivioLaRegioneInforma/PIR_AggiornamentosituazioneSicilia
3. Yuanyuan Dong, Xi Mo, Yabin Hu, Xin Qi, Fang Jiang, Zhongyi Jiang, Shilu Tong Epidemiological Characteristics of 2143 Pediatric Patients With 2019 Coronavirus Disease in China DOI: 10.1542/peds.2020-0702. https://doi.org/10.1542/peds.2020-0702 PMid:32179660
4. Chang T-H et al., Clinical characteristics and diagnostic challenges of pediatric COVID-19: A systematic review and meta-analysis, Journal of the Formosan Medical Association. https://doi.org/10.1016/j.jfma.2020.04.007
5. Wu Z, McGoogan JM. Characteristics of and important lessons from the coronavirus disease 2019 (COVID-19) outbreak in China: summary of a report of 72 314 cases from the Chinese center for disease control and prevention. JAMA 2020. https://doi.org/10.1001/jama.2020.2648 PMid:32091533
6. Day M. Covid-19: ibuprofen should not be used for managing symptoms, say doctors and scientists. BMJ. 2020;368:m1086. https://doi.org/10.1136/bmj.m1086 PMid:32184201
7. Sodhi M, Etminan M. Safety of Ibuprofen in Patients With COVID-19: Causal or Confounded? [published online ahead of print, 2020 Mar 31]. Chest. 2020;S0012-3692(20)30572-9. https://doi.org/10.1016/j.chest.2020.03.040 PMid:32243944 PMCid:PMC7151542
8. Weikle B. WHO clarifies guidance on ibuprofen, says there's no evidence it can worsen COVID-19. CBC website. https://www.cbc.ca/news/health/ibuprofen-covid-19-novel-coronavirus-1.5501496