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Cite this article as: Antonio Ruggiero, Alberto Romano and Giorgio Attinà, Covid-19 and children with cancer: are they at increased risk of infection?, *Pediatric Research* doi:[10.1038/s41390-020-0919-1](https://doi.org/10.1038/s41390-020-0919-1)

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Covid-19 and children with cancer: are they at increased risk of infection?

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AUTHOR CONTRIBUTIONS

A.Ru. and G.A. conceptualized the manuscript and analyzed data. A.Ru. and A.R. participated in the writing of the first draft of the manuscript, reviewed the revisions and approved the final manuscript as submitted.

The authors declare no competing interests and no financial support from any organisation for the submitted work; no financial relationships with any organisations that might have an interest in the submitted work, no other relationships or activities that could appear to have influenced the submitted work.

For this type of study formal consent is not required.

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Impact:

No relevant literature on Covid-19 infection and children with cancer.

Simple educational recommendations actually constitute the only available and inexpensive measure for the prevention of Covid-19 infection.

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To the Editor:

At the beginning of December 2019, the new coronavirus COVID-19 outbreak started in Wuhan, China and rapidly escalated into a global pandemic: Italy, Spain, France, Iran, Korea, United Kingdom, the United States, and other countries are actually registering an increased number of deaths.

To April 5, 2020, 1.051.635 confirmed cases are reported although the number of confirmed cases is still increasing (1). Similar to other viral respiratory diseases, its spread occurs through respiratory droplets resulting from sneezing and coughing of infected people and close contacts are required for its transmission.

The clinical spectrum of the disease is very variable from asymptomatic or pauci-symptomatic to severe forms with respiratory insufficiency requiring hospitalization in intensive care unit. The elderly and patients receiving immunosuppressant treatments, can be at risk of developing severe disease with respiratory failure. Children with cancer receiving immunosuppressive chemotherapy have typically significant quantitative and qualitative abnormalities in T-cell function and immunoglobulin levels. Even after completion of chemotherapy the immune dysfunction may persist for several months (2).

In order to identify current (and relevant) evidence for the risk of Covid-19 infection in children with cancer we performed a literature search via PubMed (MEDLINE) using the following search terms: “tumor”, “cancer”, “neoplasm”, “leukemia”, “lymphoma”, “cancer survivors” and matched with “Covid-19” and selected for the filter “child: birth-18 years”. We also carried out a search by associating three words, one of which was “Covid-19”, one belonging to the first group already mentioned and one between “children”, “childhood”, and “pediatric” without any filters. Finally, we analyzed all the 59 articles resulted for the search “Covid-19” selected for the filter “child: birth-18 years”.

Our search revealed only one manuscript focused on this topic resulting from the match “chemotherapy” and “Covid-19” but the text is in Chinese language and cannot be obtained through the Pubmed platform (3).

Through the research carried out, therefore, we have observed that no relevant specific report about clinical and epidemiological characteristics have as yet been published on this topic as well as no fatal case has been described in children with cancer affected by Covid-19 infection.

Recent data on the Covid-19 outbreak report a very low incidence of confirmed cases in children as well as milder clinical pictures when compared to adults and elderly (3,4).

To our knowledge, at present there is still neither available a specific vaccine nor drugs for the Covid-19 infection, and current treatments are mainly based on therapy for symptoms.

In this current Covid-19 outbreak, children with cancer history may be at serious risk of not receiving the necessary treatment for their cancer either because they cannot access easily hospitals for the infection risk or because, once there, they do not receive their normal medical care due to the restrictions for the Covid-19 infection. Treatments delays and under-treatments for cancer may be possible concerns. The whole community of pediatric oncologists is reacting to the new medical and social emergency with different initiatives, such as online medical counselling, email or messages exchange with patients and their families. In addition, especially children with cancer receiving antineoplastic treatments are well trained to comply with the basic hygiene rules and to avoid places and circumstances at risk of infection: frequent hand washing, use of the mask and the avoidance of crowded places or contact with people with respiratory disorders are standardized recommendations.

Never before have these rules become fundamental: the current outbreak of Covid-19 confirms that these rules should not only be respected but increased as they constitute an appropriate behaviour for any viral epidemic situation. Pending the availability of vaccine or effective drugs to treat the Covid-19 infection, these simple educational recommendations actually constitute the only available and inexpensive treatment.

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