

SARS-CoV-2/COVID-19 in Patients with Cancer

<https://doi.org/10.32635/2176-9745.RBC.2020v66n2.970>

Sars-CoV-2/Covid-19 em Pacientes com Câncer

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On December 12, 2019 a cluster of pneumonia cases caused by a recently identified coronavirus was announced in Wuhan, China. Initially, the World Health Organization (WHO) named this coronavirus as 2019 novel coronavirus (2019-nCoV) on January 12, 2020. The epidemic of the respiratory tract acute infection spread rapidly, and the WHO has officially named the disease as coronavirus disease 2019 - COVID-19 and the novel coronavirus as the virus of the severe acute respiratory syndrome coronavirus 2 – Sars-CoV-2¹.

As an emerging acute respiratory infectious disease, COVID-19 spreads mainly through the respiratory tract by droplets, respiratory secretions and direct contact². However, there are reports that Sars-CoV-2 has been isolated from fecal swabs and blood, indicating the possibility of transmission by multiple routes¹.

The disease is highly transmissible among human beings. The patients presented symptoms as fever, malaise and cough³. Although the initial clinical sign of COVID-19, that allowed to detect the cases has been pneumonia, recent reports of gastrointestinal symptoms and asymptomatic infections mainly in children appeared⁴.

Risk factors for evolution with severe clinical condition and death by COVID-19 infections include advanced age and comorbidities, common characteristics in patients with cancer⁵. In addition, cancer itself, and its treatment makes patients with neoplasms more susceptible to pneumonias due to weakened immune response to respiratory bacteria and virus. Thus, the epidemic spread of Sars-CoV-2 poses great challenges to clinical practice of oncology and hematology⁶.

Despite more than 3,000 (on April 7, 2020) scientific articles about Sars-CoV-2/COVID-19 available at PubMed, there are still few consistent studies about the increased risk of infection in patients with cancer and its impact in the prognosis.

In a pioneer report of Liang et al.⁷, published in *The Lancet Oncology*, of 1,590 COVID-19 confirmed cases, 18 patients had cancer history (prevalence = 1.1%). Compared to patients without cancer, patients with cancer were older (mean age of 63.1 years *vs* 48.7 years), the proportion of smoking history was higher (22% *vs* 7%), more polypnea (47% *vs* 23%) and severer initial manifestation visualized in the chest computed tomography (94% *vs* 71%), but did not present significant differences in relation to gender, basal symptoms and other comorbidities or baseline severity in chest radiology. The authors concluded that the patients with cancer were more likely to develop COVID-19 and worse prognosis than those without cancer. This report has been pointed out as the first to focus in the occurrence of COVID-19 in patients with cancer⁸. However, Xia et al.⁹ highlighted that a small number of cases was investigated with several types of cancer of different biological behaviors, highly variable disease courses (from 0 to 16 years) and diverse treatment strategies, which might be not representative of the population with cancer. In addition, notably, the mean age of these patients (63.1%) was significantly higher than those without cancer (48.7 years), suggesting that advanced age was associated to worse evolution of COVID-19. Another aspect is that the proportion of smokers was much higher in patients with cancer, above all in cases of lung cancer, which is being indicated as factor of severity of the disease.

In another study, Zhang et al.¹⁰ identified retrospectively 28 patients with cancer among 1,276 patients with COVID-19 (prevalence = 2.2%) hospitalized in three hospitals in Wuhan, China between January and February 2020. The authors provided the first estimate of probability of death in patients with cancer and COVID-19, with rate of lethality of 28.6%, nearly tenfold higher than reported for the group of patients with COVID-19 in China. Oh⁵ comments the study and highlights that caution is required to interpret these results because the series of patients

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is small, limited but to the severest cases, with retrospective data, which makes the extrapolation to other countries problematic. The article concludes that, in despite of this, patients with cancer must, at least, keep social distancing or isolation and be eligible to early and fast clinical evaluation should COVID-19 suspected symptoms onset, including viral tests and chest imaging tests.

In a recent meta-analysis¹¹, that included articles published until March 14, 2020 utilizing the terms “COVID-19,” “novel coronavirus,” “SARS-CoV-2,” “2019-nCov,” and “cancer”, “neoplasm”, “tumor”, “malignancy”, 276 articles were identified, of which 266 were excluded for duplication. The analysis of the 11 articles selected showed that the prevalence of cancer in patients with COVID-19 is 2.0% (95%CI 2.0% – 3.0%), suggesting that cancer patients and survivors are an important risk population for COVID-19.

Based in these pioneer reports, it is possible to conclude that, apparently, patients with cancer have a higher risk than the general population of developing COVID-19, evolving with high rates of mortality. However, innumerable are the challenges related to prevention and control of Sars-CoV-2/COVID-19, and many questions remain unanswered by the science.

REFERENCES

1. Guo YR, Cao QD, Hong ZS, et al. The origin, transmission and clinical therapies on coronavirus disease 2019 (COVID-19) outbreak - an update on the status. *Mil Med Res.* 2020;7(1):11. doi:<https://doi.org/10.1186/s40779-020-00240-0>
2. Li Q, Guan X, Wu P, et al. Early transmission dynamics in Wuhan, China, of novel coronavirus-infected pneumonia. *N Engl J Med.* 2020;382:1199-1207. doi: <https://doi.org/10.1056/NEJMoa2001316>
3. Huang C, Wang Y, Li X, et al. Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. *Lancet.* 2020;395(10223):497-506. doi: [https://doi.org/10.1016/S0140-6736\(20\)30183-5](https://doi.org/10.1016/S0140-6736(20)30183-5)
4. Chan JFW, Yuan S, Kok KH, et al. A familial cluster of pneumonia associated with the 2019 novel coronavirus indicating person-to-person transmission: a study of a family cluster. *Lancet* 2020;395(10223):514-523. doi: [https://doi.org/10.1016/S0140-6736\(20\)30154-9](https://doi.org/10.1016/S0140-6736(20)30154-9)
5. Oh WK. COVID-19 infection in cancer patients: early observations and unanswered questions. *Ann Oncol.* 2020;pii:S0923-7534(20)36384-5. doi:<https://doi.org/10.1016/j.annonc.2020.03.297>
6. Yang G, Zhang H, Yang Y. Challenges and countermeasures of integrative cancer therapy in the epidemic of COVID-19. *Integr Cancer Ther.* 2020;19:1534735420912811. doi: <https://doi.org/10.1177/1534735420912811>
7. Liang W, Guan W, Chen R, et al. Cancer patients in SARS-CoV-2 infection: a nationwide analysis in China. *Lancet Oncol.* 2020;21(3):P335-337. doi: [http://doi.org/10.1016/S1470-2045\(20\)30096-6](http://doi.org/10.1016/S1470-2045(20)30096-6)
8. Wang H, Zhang L. Risk of COVID-19 for patients with cancer. *Lancet Oncol.* 2020;21(4):PE181. doi: [http://doi.org/10.1016/S1470-2045\(20\)30149-2](http://doi.org/10.1016/S1470-2045(20)30149-2)
9. Xia Y, Jin R, Zhao J, et al. Risk of COVID-19 for patients with cancer. *Lancet Oncol.* 2020;21(4):PE180. doi: [http://doi.org/10.1016/S1470-2045\(20\)30150-9](http://doi.org/10.1016/S1470-2045(20)30150-9)
10. Zhang L, Zhu F, Xie L, et al. Clinical characteristics of COVID-19-infected cancer patients: a retrospective case study in three hospitals within Wuhan, China. *Ann Oncol.* 2020;pii:S0923-7534(20)36383-3. doi:<http://doi.org/10.1016/j.annonc.2020.03.296>
11. Desai A, Sachdeva S, Parekh T, et al. COVID-19 and cancer: lessons from a pooled meta-analysis. *JCO Glob Oncol.* 2020;6:557-559. doi:<http://doi.org/10.1200/GO.20.00097>

Recebido em 9/4/2020
Aprovado em 9/4/2020

THE BRAZILIAN JOURNAL OF ONCOLOGY IS RECEIVING SUBMISSIONS OF
MANUSCRIPTS ABOUT CANCER AND COVID-19.