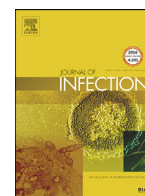




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## Letter to the Editor

## Cancer in intensive care unit patients with COVID-19



In a recent article, Ma et al. suggested that patients with cancer will be more susceptible to severe acute respiratory syndrome corona virus 2 (SARS-CoV-2) infection and complications, although data on COVID-19 and malignancies remain limited.<sup>1</sup> In a small study, Liang et al. noted that patients with cancer were more likely to experience severe sequelae of SARS-CoV-2 infection, such as intensive care admission, invasive ventilation or death.<sup>2</sup> However, Wang and Zhang argued that the most important morbidity factor is exposure to an infection source, whereas worse outcomes from SARS-CoV-2 infection could be associated (at least partly) with older age of patients with cancer.<sup>3</sup> Xia and colleagues also concluded that current evidence is insufficient to confirm an association between cancer and COVID-19.<sup>4</sup> These issues have important implications for management of patients with malignancies during pandemics of COVID-19 that continues to evolve in many countries including Russia.

In a nationwide study, we evaluated the prevalence of malignancies among 1307 intensive care unit (ICU) patients with SARS-CoV-2 pneumonia who required respiratory support. Medical records were submitted via Internet by the COVID-19 hospitals located in 60 regions across Russia to the Federal Center at the Sechenov University (Moscow) that provided advice on management of patients. Diagnosis of SARS-CoV-2 pneumonia was confirmed both by polymerase chain reaction (PCR) and CT. In patients with inconclusive or pending results of PCR, SARS-CoV-2 pneumonia was defined as severe acute respiratory infection with typical CT findings (bilateral multilobar ground-glass opacification with a peripheral or posterior distribution, or multifocal consolidative opacities superimposed on ground-glass opacification)<sup>5</sup> and no other obvious aetiology.

Various tumors were reported by the local physicians in 31 patients (2.4%). However, only 19 patients (1.5%) had active tumors or underwent chemotherapy or surgery in the past 3 months

**Table 1**  
Characteristic of patients with COVID-19 and malignancies

Location of tumor	Age/ gender	Status/treatment	Comorbidities
Cervix	55/F	Surgery	-
Parotid gland	68/M	Relapse (2019)	History of tuberculosis
Lung	58/M	Chemotherapy (2020)	-
Pancreas	63/F	Untreated	Hepatitis C
Breast	68/F	Mastectomy (2019)	Hypertension, diabetes, obesity
Breast	89/F	Mastectomy (2017)	Diabetes, history of MI
Colon	75/M	Colectomy (2019)	History of MI, asthma
Brain	58/M	Surgery (2020)	Obesity
Liver	67/M	Untreated	Diabetes, coronary stenting, hepatitis B
Stomach	75/M	Gastrectomy (2020)	Hypertension
Kidney	72/F	Surgery (2019)	Peritonitis (2020)
Prostate	61/M	Untreated	Hypertension, obesity
Breast	88/F	Mastectomy and chemotherapy (2015)	-
Thyroid gland	57/F	Untreated	Hypertension, diabetes, tuberous sclerosis
Rectum	56/F	Surgery (2020)	Hypertension
Breast	75/F	Mastectomy (2019)	-
Breast	83/F	Mastectomy (2019)	Hypertension
Breast	75/F	Mastectomy	Hypertension, diabetes
Lung	80/F	Chemotherapy (2020)	Hypertension
Ewing sarcoma	70/M	No data	COPD
Lung	78/F	Surgery (2020)	Hypertension
Stomach	60/F	Gastrectomy (2020)	Hypertension, diabetes
Breast	79/F	Mastectomy and chemotherapy (2020)	-
Liver	64/M	Untreated	Hypertension, history of stroke
Colon	69/M	Untreated	Hypertension, diabetes
Lung	83/M	Untreated	Hypertension, history of MI
Liver	66/M	Untreated	Hypertension
Duodenum	73/M	Surgery and chemotherapy (2019)	Hypertension, history of MI
Kidney	46/M	Surgery (2016)	Hypertension
Kidney	63/M	Untreated	Hypertension, dialysis, history of stroke
Histiocytoma	55/M	Surgery and chemotherapy (2020)	Pulmonary embolism

Note: MI – myocardial infarction

(Table 1). As expected, lung and breast cancers were the most common malignancies. Median age of patients was 66 years. Most patients were older than 60 and/or had comorbidities, such as cardiovascular diseases and type 2 diabetes.

In summary, the prevalence of malignancies was low among ICU patients with SARS-CoV-2 infection and did not exceed that in the general population. Therefore, patients with malignant tumors were not overrepresented in this cohort of patients with severe infection. We realize that our reassuring findings may be misleading, since we do not know the total number of cancer patients who contracted SARS-CoV-2 in Russia and cannot definitely conclude that malignancy did not worsen outcomes of COVID-19. However, our data suggest that other factors, such as older age and comorbidities, contribute significantly to the more severe course of SARS-CoV-2 infection in cancer patients.

We declare no competing interests.

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Sergey Moiseev\*

Sergey Avdeev

Michail Brovko

Larisa Akulkina

Victor Fomin

Sechenov First Moscow State Medical University, 119882 Moscow,  
Russia

\*Corresponding author: Sergey Moiseev. Tareev Clinic of  
Internal Diseases. Rossolimo, 11/5, Moscow, 119435, Russia.

E-mail address: [avt420034@yahoo.com](mailto:avt420034@yahoo.com) (S. Moiseev)