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## Brief report

# COVID-19 mortality in cancer patients in a Madrid hospital during the first 3 weeks of the epidemic<sup>☆</sup>



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## ABSTRACT

**Background and objective:** The Covid-19 pandemic especially affects cancer patients with higher incidence and mortality according to published series of original pandemic foci. The study aims to determine the mortality in our center due to covid-19 in cancer patients during the first 3 weeks of the epidemic.

**Material and methods:** The cancer patients who died of covid-19 during the analysis period have been reviewed describing the oncological and the covid-19 infection characteristics and the treatments established.

**Results:** Confirmed cases covid-19: 1069 with 132 deaths (12.3%). With cancer 36 patients (3.4%), 15 deceased (41.6%). Of the deceased, only 6 patients (40%) were in active treatment. The most frequent associated tumor was lung (8/15 patients, 53.3%), 11 with metastatic disease (11/15, 73.3%). No specific treatment was established in 40% (6/15) of the patients. The rest of them received treatments with the active protocols.

**Conclusion:** Covid-19 mortality in cancer patients is almost four times higher than that of the general population. Until we have effective treatments or an effective vaccine, the only possibility to protect our patients is to prevent the infection with the appropriate measures.

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## Mortalidad por COVID-19 en pacientes con cáncer en un hospital de Madrid durante las primeras 3 semanas de epidemia

## RESUMEN

**Antecedentes y objetivo:** La pandemia por Covid-19 afecta especialmente a pacientes con cáncer con mayor incidencia y mortalidad según series publicadas de focos originales de pandemia. El estudio pretende conocer la mortalidad en nuestro centro por covid-19 en pacientes con cáncer durante las primeras 3 semanas de epidemia.

**Material y métodos:** Se han revisado los pacientes con cáncer fallecidos por covid-19 durante el periodo de análisis describiendo las características oncológicas, de la infección por covid-19 y de los tratamientos instaurados.

**Resultados:** Casos confirmados covid-19: 1069 con 132 fallecimientos (12,3%). Con cáncer 36 pacientes (3,4%), 15 fallecidos (41,6%). De los fallecidos solo 6 pacientes (40%) se encontraban en tratamiento activo. El tumor más frecuente asociado fue pulmón (8/15 pacientes, 53,3%), 11 con enfermedad metastásica (11/15, 73,3%). El 40% (6/15) no recibió tratamiento específico contra covid-19, el resto fue tratado con los protocolos activos.

## Palabras clave:

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**Conclusión:** La mortalidad por covid-19 en pacientes con cáncer casi cuadruplica la de la población general. Hasta disponer de tratamientos eficaces o una vacuna efectiva la única posibilidad de proteger a nuestros pacientes es impedir el contagio con las medidas adecuadas.

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## Introduction

In December 2019, a new infectious disease with the official name of covid-19, caused by a new type of coronavirus called the SARS-CoV-2 virus, was first detected in the Chinese city of Wuhan (Hubei Province).<sup>1,2</sup> The virus is characterized by a very high transmission capacity between humans and enormous virulence. The associated symptoms are initially flu-like, but can subsequently cause severe, unilateral or bilateral pneumonia and acute respiratory distress syndrome linked to the associated inflammatory response.<sup>2,3</sup>

After a first phase of apparent containment in China, the infection has spread rapidly and widely throughout the world, which is why on 11th March 2020 the World Health Organization declared it a pandemic.<sup>4</sup> In Spain, the first case was detected on the Island of La Gomera on 31 st January, in Madrid on 25th February, and in our site on 5th March 2020. A few days later, due to the rapid increase in cases, community transmission was declared in Spain.

Since then, cancer patients are among the few patients who have continued with the usual diagnostic and therapeutic procedures as their care is considered essential. Visits to outpatient clinics and day hospitals to receive the various treatments have remained largely unchanged. This, together with the immunosuppression generally associated with treatments, are considered to cause a higher incidence and mortality.<sup>5–7</sup>

## Material and methods

All covid-19 deaths in patients admitted to our center during the first 3 weeks of the epidemic and who had a history of cancer in the last 5 years without evidence of disease or cancer in active treatment have been reviewed. The cancer-related characteristics of the deceased patients are described, as well as the characteristics of the covid-19 infection and the treatments established.

## Results

The first diagnoses of covid-19 were confirmed in our center on 4th March 2020. On 5th March, the first case was confirmed in a cancer patient. Up to 27th March 2020, the number of patients admitted with clinical or imaging data compatible with covid-19 disease and confirmed by polymerase chain reaction (PCR) was 1069 in the general population with 132 deaths (12.3%). During the period analysed 36 patients with a history of cancer in the last 5 years or with active cancer have suffered from covid-19 disease confirmed by PCR, which represents 3.4% of confirmed cases, and 15 patients have died from the infection (41.6% mortality).

The mean age of the 15 deceased patients was 72 (range: 34–90) with 11 men (73.3%) and 4 women (26.7%). Of these, 9 patients had no active cancer treatment at the time of infection (60%), 4 were on follow-up with no known active neoplastic disease (one of non-small-cell lung carcinoma, one of the bladder, one of the rectum, and one of melanoma), 3 patients with exclusively symptomatic treatment (one patient with prostate cancer, one with lung cancer and one patient with neuroendocrine bladder cancer), and another 2 became infected during the diagnostic process of their neoplasm, dying before starting specific antineoplastic treatment (both with non-small cell lung carcinoma). Of the remaining 6 patients, all in active treatment (40%), 4 patients had lung cancer with metastatic

**Table 1**

Clinical and demographic characteristics of patients who died of COVID-19 and cancer.

Characteristic	N	Percentage
<i>Sex</i>		
Male	11/15	73.3
Female	4/15	26.7
<i>Cancer type</i>		
Lung	8/15	53.3
Bladder	2/15	13.3
Colorectal	2/15	13.3
Prostate	1/15	6.7
Melanoma	1/15	6.7
Choriocarcinoma	1/15	6.7
<i>Disease spread</i>		
Non-metastatic	4/15	26.7
Metastatic	11/15	73.3
<i>Cancer treatment</i>		
Follow-up without treatment	4/15	26.7
Not started	2/15	13.3
Active	6/15	40
Symptomatic	3/15	20
<i>Comorbidities</i>		
Hypertension	10/15	66.7
Chronic lung disease	4/15	26.7
Obesity	2/15	13.3
Diabetes	1/15	6.7
Renal failure	1/15	6.7

**Table 2**

Symptoms and treatment of patients who died of COVID-19 and cancer.

	N	Percentage
<i>Symptoms</i>		
Cough	13/15	86.7
Fever	14/15	93.3
Dyspnoea	7/15	46.7
Myalgia	3/15	20
Diarrhoea	1/15	6.7
<i>Treatment COVID-19</i>		
	7/15	46.7
Lopinavir/ritonavir + hydroxychloroquine		
Hydroxychloroquine + Azithromycin	1/15	6.7
	1/15	6.7
Lopinavir/ritonavir + hydroxychloroquine + azithromycin		
No treatment	6/15	40

disease (one small-cell carcinoma, one squamous-cell carcinoma, and 2 adenocarcinomas), one patient with metastatic choriocarcinoma, and one patient with metastatic colon cancer. Regarding associated non-cancer comorbidities, of the 15 deceased patients, 10 patients had arterial hypertension (66.7%), 4 chronic obstructive pulmonary disease (26.7%), 2 obesity (13.3%), one patient insulin-dependent diabetes (6.7%) and one patient with chronic renal failure (6.7%) (Table 1).

The most common symptoms in the 15 deceased were fever (13 patients, 86.7%), cough (14 patients, 93.3%) and dyspnoea (13 patients, 86.7%). Active treatment for covid-19 infection was established in 9 patients (60%). Hydroxychloroquine (60%) was administered to all those treated (9/15), 8 patients received lopinavir/ritonavir (53.3%) and 2 patients also received azithromycin (13.3%). The mean time from diagnosis to death was 4.4 days (range: 0–11) (Table 2).

## Discussion

The covid-19 pandemic is tragic in our country because of the incidence and associated mortality, and a particularly sensitive group is cancer patients, as shown by data collected at our hospital. The cancer prevalence report of the Spanish Cancer Association Outcomes Observatory establishes a number of prevalent cancer patients at 5 years in 2019 of 1568 per 100,000 (1.56% of the population).<sup>8</sup> The observed incidence of patients with a history of cancer in the last 5 years or active cancer and covid-19 disease in the small sample of our site represents 3.36%, thus doubling the expected figure. This increase in incidence is consistent with the possible nosocomial transmission mechanism during visits to the center for diagnostic tests, consultations or treatment described by Yu J. et al.,<sup>5</sup> reaching higher figures than those described by Zhang L. et al.<sup>6</sup> in a series from 3 hospitals in Wuhan (China) with 28 cases out of a total of 1276 (2.2%) patients admitted with covid-19 confirmed by PCR.

The mortality observed in our study is remarkably high, reaching 41.6% of covid-19 patients with cancer and almost quadrupling the mortality rate in the general population (12.3%). This figure even exceeds the 28.6% described by Zhang L. et al. with 8 deceased out of 28 patients with cancer and covid-19 disease.<sup>6</sup> It also exceeds the 39% (7/18) of serious events (including intubation and death) in the study by Liang W. et al.<sup>7</sup> in a series of 18 cancer patients and covid-19 out of a total of 2007 cases admitted with disease confirmed by PCR from 575 hospitals in China. In our series, this mortality is probably explained by the presence of metastatic disease in the majority of patients (73.3%), which represents a high burden of previous disease and, therefore, low expectation of a favourable outcome with specific treatment for covid-19 (40% patients did not receive treatment). On the other hand, in patients in active antineoplastic treatment, the high toxicity of these and the immunosuppression induced by most treatments should be considered. In addition, the

rapid progression of the infection is remarkable, probably due to the neoplastic disease itself, with a poor general underlying condition, in addition to the fact that no patient was considered a candidate for admission to the intensive care unit, although they were treated with the treatment protocols for active covid-19 at all times.

In conclusion, due to the high mortality in patients with cancer and covid-19 disease, and in the absence of truly effective treatments and until the arrival of a vaccine, we should focus our efforts on minimizing the possibility of contagion with adequate containment and self-protection measures, limiting hospital visits as much as possible and establishing adequate clean circuits during their hospital stay.

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