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Systemic anti-cancer therapy and metastatic cancer are independent mortality risk factors during two UK waves of the COVID-19 pandemic at University College London Hospital

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Background: Data from the first wave of COVID-19 infection demonstrated that a history of cancer and SACT was associated with poorer outcomes. Our study compares outcomes for cancer patients matched to non-cancer patients between the two waves in order to explore further how cancer and its treatment may impact COVID-19 mortality.

Methods: Data was collected for patients with positive PCR and history of cancer between 1 Mar to 20 May 2020 and 1 Dec to 8 Feb 2021 for wave 1 and 2, respectively. A contemporaneous cohort of patients without cancer were age- and sex-matched for comparison.

Results: The total number of patients presenting with COVID-19 was higher in wave two (1135 vs 626). 207 of these patients had cancer, and were matched to 452 patients without cancer from both waves. There was a significantly improved chance of mortality in wave 2 (HR 0.41, p < 0.0001). When adjusting for age, sex and comorbidities, cancer was an independent risk factor for mortality amongst hospitalised with COVID-19 in wave 1 (HR 1.62, p = 0.02), but not in wave 2. There was a trend towards improved survival for hospitalised patients in wave 2 receiving COVID-19 specific treatment including dexamethasone, remdesivir, tocilizumab (HR 0.75, p = 0.086). For the combined cancer cohort, SACT was an independent predictor of mortality, as was metastatic disease.

Table: 1575P

| Malignancy status       | HR (95% CI) | P-value |
|-------------------------|------------|---------|
| Metastatic              | 2.1 (1.02 - 4.34) | 0.04 |
| Active                  | 0.55 (0.28 - 1.08) | 0.08 |
| Active anti-cancer       | 1.75 (0.97 - 3.18) | 0.06 |
| SACT                    | 2.01 (1.30 - 3.66) | 0.02 |
| Cytotoxic chemotherapy   | 1.93 (0.93 - 4.00) | 0.08 |
| Endocrine therapy        | 1.66 (0.69 - 3.96) | 0.25 |
| Targeted therapy         | 0.84 (0.11 - 6.28) | 0.86 |
| Immunotherapy            | 1.73 (0.74 - 4.11) | 0.46 |
| Radiotherapy             | 2.04 (0.62 - 6.74) | 0.24 |
| Surgery                 | 0.67 (0.09 - 4.98) | 0.69 |

Conclusions: The mortality for both cancer and non-cancer patients improved between waves of the pandemic. Advances in detection, prevention and treatment may account for this. Cancer was no longer a risk factor for mortality in the second wave, however SACT and metastatic cancer remained risk factors for mortality within the cancer cohort. This emphasises the need for ongoing protection of patients with advanced cancer and those on SACT, including through their prioritisation for COVID-19 vaccination globally.

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Background: The COVID-19 pandemic remains a public health emergency of global concern, with higher mortality rates in cancer patients as compared to the general population. However, early mortality of COVID19 in cancer patients has not been compared to historical real-world data from oncology population in pre-pandemic times.

Methods: Longitudinal multicenter cohort study of patients with cancer and confirmed COVID-19 from Oncolinecas Group in Brazil from March to December 2020. The primary endpoint was 30-day mortality after isolation of the SARS-CoV-2 by RT-PCR. As historical control, we selected patients from Oncoclinicas Data Lake treated before December 2019 and propensity score-matched to COVID-19 cases (3:1) based on the following clinical characteristics: age, gender, tumor type, disease setting (curative or palliative), time from diagnosis of cancer (or metastatic disease) to COVID-19 infection.

Results: In total, 533 cancer patients with COVID-19 were prospectively registered in the database, with median age 60 years, 67% females, most frequent tumor types breast (34%), hematological (16%), gastrointestinal (15%), genitourinary (12%) and support: Roche; Non-Financial Interests, Personal, Other, None.

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Background: During the first year of the SARS-CoV-2 pandemic the management and treatment of COVID-19 have been improved. However, cancer patients continue to be one of the most affected. We evaluate the mortality rate due to COVID-19 and associated factors in the cancer population diagnosed in our center during the first year of pandemic.

Methods: We retrospectively reviewed the medical records of 189 cancer patients who were diagnosed with COVID-19 between March 5, 2020 and February 28, 2021. Mortality rate and associated risk factors were studied.

Results: Mortality rate: 55/189 patients. Mean age: 72 years (34-95), 125/189 male patients. Predominant histologies: lung cancer (72/189), colorectal (31/189), breast cancer (18/189), hematological (14/189). Predominant cancer treatment: chemotherapy (63/189); 118/189 patients were receiving any type of oncologic treatment with palliative intention. Mortality was associated with male gender (45/55 vs 10/55, p = 0.004), presence of comorbidities (48/55 vs 7/55, p = 0.004), lung cancer (28/72 deaths with this tumor vs 27/117 with the rest, p = 0.02), palliative intention cancer treatment (41/55 vs 12/55, p = 0.002), older median age (76 vs 71, p = 0.02), higher median CRP (p = 115.6 mg/dl vs 46 mg/dl), lower median lymphocytes (600/mm3 vs 1000/mm3, p = 0.001). No specific treatment against COVID-19 was significantly decreased mortality. Neither IL-6 nor ferritin were prognostic biomarkers. In multivariate analysis, male gender (OR 2.58, 95% CI 1.1-5.9, p = 0.02), lung cancer (OR 2.0, CI 1.0-3.8, p = 0.03), cancer treatment with palliative intention (OR 2.4, CI 1.07-5.3, p = 0.03), higher median CRP (OR 1.0, CI 1.00-1.01, p < 0.001), as well as low lymphocyte median (OR 0.5, CI 0.25-1.0, p = 0.56), continued to be evidenced as risk factors, regardless of comorbidities, staging, sex, and palliative intention cancer-specific treatment, among other variables.

Conclusions: Men with lung cancer under cancer-specific treatment with palliative intention who present, at the diagnosis of SARS-CoV-2 infection with elevated CRP 115 mg/dl and a decrease in lymphocytes below 600/mm3 have a higher risk of presenting fatal complications.

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