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**Background:** The severity of SARS-CoV-2 infection (COVID-19) is predicted by advancing age and co-morbidities. The relative contribution of cancer in influencing the course of COVID-19 is poorly understood. We designed the OnCOVID study to investigate natural history of COVID-19 disease in cancer patients.

**Methods:** This retrospective, multi-center observational study conducted across 8 tertiary centers in Europe recruited cancer patients aged \( \geq 18 \) and diagnosed with COVID-19 between February 26th and April 1st, 2020. Descriptive statistics, univariable and multivariable Cox regression models were used to assess patient’s main clinical characteristics and to evaluate the factors associated to COVID-19 related mortality.

**Results:** We identified 204 patients from United Kingdom (n=97, 48%), Italy (n=56, 27%) and Spain (n=51, 25%). Most patients were male (n=127, 62%) had a diagnosis of solid malignancy (n=184, 91%) and 103 (51%) had non-metastatic disease. Mean (±SD) patient age was 69±13 years, and 161 (79%) had \( \geq 1 \) co-morbidity, most commonly hypertension (n=88, 43%) and diabetes (n=46, 23%). Commonest presenting symptoms were fever (n=136, 67%) and cough (n=119, 58%), beginning 3.8 (±4.5) days before diagnosis. Most patients (n=141, 69%) had \( \geq 1 \) complication from COVID-19, including respiratory failure (n=128, 63%) and acute respiratory distress syndrome (n=36 patients, 18%). Patients were escalated to high-dependency or intensive care. At time of analysis, 59 patients had died (29%), 53 were discharged from hospital (26%) and 92 (45%) were in-hospital survivors. Mortality was higher in patients aged \( \geq 65 \) (36% versus 16%), in those with \( \geq 2 \) co-morbidities (40% versus 18%) and developing \( \geq 1 \) complication from COVID-19 (38% versus 4%, \( p=0.004 \)). Multiple variable analyses confirmed age \( \geq 65 \) and \( \geq 2 \) co-morbidities to predict for patient mortality independently of tumor stage, active malignancy or anti-cancer therapy.

**Conclusions:** In the early outbreak of SARS-CoV-2 infection in Europe co-morbid burden and advancing age predicted for adverse disease course in cancer patients. Risk stratification based on these factors should inform personalized oncological decision making during the COVID-19 pandemic.

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**Background:** In a clinical registry that enables near real-time reports to frontline doctors about the course of COVID-19 is poorly understood. We designed the OnCOVID study to investigate natural history of COVID-19 disease in cancer patients.

**Methods:** We tested every patient (n=1286) in 7 different oncology outpatient clinics from 04/15/2020 and 04/26/2020 for COVID-19 infection regardless of whether symptoms were present or not. Virus RNA was extracted using the MGEasy extraction kit in combination with SP-960 robots and a RT qPCR was performed.

**Results:** From 1286 tested patients 40 (3.1%) patients were identified positive. Only two of those (5.0%) had mild symptoms whereas one positive patient (2.5%) was treated stationary with pneumonia. The majority (37/40) was asymptomatic virus-carriers (92.5 %). Noteworthy is the fact that 22 (55%) of the positively tested patients were undergoing systemic therapy of which 10 (45.5%) patients received chemotherapy and 4 (18.2%) patients received immunomodulating antibodies.

**Conclusions:** As a consequence testing for COVID-19 in cancer patients is obligate to identify asymptomatic positive carrier to separate this potential vector group from COVID negative patients. An asymptomatic COVID-19 virus-carrier (92.5 %). The data we collected contrasts strongly the hypothesis that cancer patients are suspected to be highly vulnerable for SARS-CoV-2 infections. Therefore, we conclude that asymptomatic COVID-19 infection seems to have no impact on the further course of a chemotherapy.

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