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SARS-CoV-2 infection in prostate cancer patients: Data from a high-incidence area in Italy

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Background: Novel SARS-CoV-2 infection has been a severe health problem in Italy since the beginning of March 2020, with around 227,000 confirmed cases on May 18th, 2020. The north-western part of Tuscany has been one of the areas with the highest incidence (342/100,000 inhabitants) and the highest lethality rate (31,2/100,000 inhabitants). The lethality rate was higher in men than women (12.6% vs. 7.4%). People aged 70-79 represented half of this population and the deaths in this subgroup represented 15.9% of all SARS-CoV-2-related deaths. Cancer patients are known to be at higher risk of incidence and complications from SARS-CoV-2. We aimed at analyzing the incidence and the lethality of Sars-CoV-2 in our prostate cancer (PC) patients (pts), in whom hormonal therapy seems to be protective from the first evidences published in the literature.

Methods: We reviewed all the clinical files of PC pts'visits performed from March 1st to April 30th, 2020 in the University Hospital of Pisa. We analyzed the demographic characteristics, the comorbidities, the type of hormonal therapy pts received, the incidence of SARS-CoV-2 and the related lethality rate.

Results: 132 pts with PC had face-to-face or telemedicine visits in the considered period. The median age was 76 (range 52-91); 86 (65.15%) pts were 75 or older. The median number of comorbidites was 2 (range 0-6); 112 (84.85%) pts had at least two comorbidities. 115 (87.12%) pts received LHRH analogue in the adjuvant or metastatic setting, 17 (12.88%) pts received LHRH analogue in combination with an anti-androgen. One pt had a confirmed SARS-CoV-2 infection (0.76%), other 2 pts (1.52%) had a clinical and/or radiological suspicion of SARS-CoV2 infection, but no PCR confirmation. One of these three pts (0.76%) died of ARDS (the considered pt had no PCR confirmation of SARS-CoV-2); the patient was 89 years old and had three comorbidities.

Conclusions: In our population, living in a high-incidence area for SARS-CoV2 infection, though being composed by elderly men with a discrete number of comorbidities, the incidence rate was quite low, as well as the lethality rate, corroborating the data published in the literature.

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Risk of SARS-CoV-2 infection and outcome after infection: Experience from the day-care unit at CHU Liège in Belgium

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Background: No specific safety data concerning systemic oncological treatments were available at time of COVID-19 outbreak in Belgium. In our hospital we decided to maintain adjuvant and early line treatments for metastatic disease in patients under 65 and without specific comorbidities and to apply a shared decision approach in other patients while following closely the safety of these treatments.

Methods: Real time safety monitoring was proposed to all patients treated for solid tumours in our day-care unit starting March $1^{\rm st}$, 2020. After signing informed consent patients were asked questions concerning protective measures at home, signs of SARS-CoV-2 infection and hospitalisation. Patients' charts were reviewed for outcome, including death, after suspected or proven SARS-CoV-2 infection. Minimum follow-up was 5 weeks after day care unit attendance.

Results: 387 patients were included in our registry between March 1^{st} and March 31^{st} , 2020. Median age was 64 years-old (range 27-90). Most patients suffered from lung (n=96), breast (n=93), gastrointestinal (n=87), gynaecological (n=38) or urological (n=33) cancers. 131 patients received (neo)adjuvant treatments, 256 patients were treated for metastatic disease. Patients received chemotherapy (n=170), immunotherapy (n=103), targeted therapy (n=68) or other combinations (n=46). Although Belgium had one of the highest infection rates in the world, safety data concerning risk of

SARS-CoV-2 infection and outcomes were rather reassuring. A total of 11 patients had either suspected (n=5, 1.3%) or proven (n=6, 1.6%) SARS-CoV-2 infection. Only one 74 years old patient died of COVID-19, another 51 years old patient died of progressive disease but presented also suspicion of SARS-CoV-2 infection at the time of death.

Conclusions: Analysis of our data for patients treated in March 2020 in the day-care unit are reassuring and suggest higher risk related to under-treatment compared to risk related to continuation of systemic therapy at time of COVID-19 outbreak. Patients' follow-up will be updated and additional analyses and data in particular for April 2020, when the infection rate was still extremely high in Belgium, will be presented.

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Active smoking and severity of COVID-19 infection in cancer patients

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Background: Smoking is the leading cause of cancer worldwide. Active smoking alters the inflammatory environment of the respiratory epithelium, increasing the production of potent pro-inflammatory cytokines that promote the recruitment of macrophages and neutrophils, leading to lung damage. We hypothesize that smoking-induced inflammation can impact on COVID-19 infection severity and mortality related to the proinflammatory cascade.

Methods: Multicenter retrospective cohort of cancer patients (pts) with COVID-19 infection diagnosed by PCR/Ag detection (n=274) and CT-scan (N=13) in Mar-Apr/20r in 12 centers. Clinical and biological data were collected. Smoker was defined as active tobacco consumption and heavy smoker as >30 pack-year (PY). Primary endpoints were 30-day mortality rate and the rate of severe acute respiratory failure (SARF), defined by oxygen requirements ≥15 L/min.

Results: A total of 287 pts were enrolled: 25 (9%) were active smokers, 127 (47%) were former and 116 (43%) never smoker. Among active smokers: 73% were heavy smokers, median age was 62y, 60% were male and median body mass index was 22. Regarding their comorbidities: 25% had hypertension, 8% cardiovascular disease, 28% chronic obstructive pulmonary disease and 24% diabetes. Thoracic tumors were the most common (52%), 72% had advanced disease and 56% were under systemic therapy. 92% of active smokers required hospitalization, 68% developed pneumonia and 58% required oxygen. Only 4% were escalated to the intensive care unit. Active smokers received treatment with hydroxychloroquine (91%), azithromycin (61%), antiviral therapy (33%) and steroids (29%). Only 4% received immunomodulatory drugs. SARF was the most common complication (25%) and no thromboembolic events were observed. A pro-inflammatory status was observed at COVID-19 diagnosis in active smokers, e.g. median of absolute neutrophil count was 6.35 (vs. 5.4), mean ferritin was 1269 (vs. 991) and D-Dimer was 2422 (vs. 1816); but with no significant differences. Overall mortality rate was 27%. Mortality rate was higher in active smokers (40% vs. 24% in non-smokers; p=0.08).

Conclusions: Active smoking might be associated with severe COVID-19 infection and early death in cancer patients. Smoking induced-inflammation should be further explored.