

Krebs-Corona und Quarantäne –
wie geht es unseren
PatientInnen und uns ?

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Caring for patients with cancer in the COVID-19 era

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The current COVID-19 pandemic challenges oncologists to profoundly re-organize oncological care in order to dramatically reduce hospital visits and admissions and therapy-induced immune-related complications without compromising cancer outcomes. Since COVID-19 is a novel disease, guidance by scientific evidence is often unavailable, and impactful decisions are inevitably made on the basis of expert opinions. Here we report how the seven comprehensive cancer centers of Cancer Core Europe have organized their healthcare systems at an unprecedented scale and pace to make their operations ‘pandemic proof’. We identify and discuss many commonalities, but also important local differences, and pinpoint critical research priorities to enable evidence-based remodeling of cancer care during the COVID-19 pandemic. Also, we discuss how the current situation offers a unique window of opportunity for assessing the effects of de-escalating anticancer regimens, which may fast-forward the development of more-refined and less-toxic treatments. By sharing our joint experiences, we offer a roadmap for proceeding and aim to mobilize the global research community to generate the data that are critically needed to offer the best possible care to patients.

Table 1 | General consensus measures taken by CCE centers during the COVID-19 pandemic

Hospital wide	Construct a hospital-wide crisis team responsible for coordinating measures between departments.
	Encourage patients not to arrive early. Offer to text patients when you are ready to see them, so they can wait outside or in the car.
	Instruct patients not to visit the hospital if they have symptoms indicative of possible COVID-19 (unless urgent attention is required).
	Call patients the day before planned hospital admissions, to discuss the presence of any COVID-19-related symptoms.
	Screen patients at the entrance for symptoms of COVID-19 and fever.
	Quickly isolate patients with COVID-19 in specialized departments, with the intent of relocation to regional collaborating hospitals (if possible).
	Reduce preclinical research activities to a bare minimum.
	Stop patient inclusion for clinical studies or trials requiring additional actions and/or visits. Consider a tumor type-specific 'exception list' of particularly successful studies for which inclusion continues.
	Discuss each patient with a multidisciplinary team to consider alternative treatment modalities with the fewest visits or lowest capacity problems or that are the shortest in duration.

Table 1 | General consensus measures taken by CCE centers during the COVID-19 pandemic

Hospital wide	Therapeutic adjustments (versus regular guidelines) should be discussed in a multidisciplinary team meeting.
	Conduct multidisciplinary team consultations remotely if possible or include only one representative of each discipline to limit the number of people participating in the meetings.
	Inform patients about a possibly increased risk associated with anticancer therapy during the COVID-19 pandemic.
	Enable telephone or video consultations for healthcare professionals who need to self-isolate.
	When postponing procedures or contact moments, anticipate future capacity problems.
	Do not prescribe corticosteroids as anti-emetics (if avoidable), and limit their use in patients treated with immune-checkpoint blockade, to reduce vulnerability to COVID-19.
	With each patient, discuss resuscitation status to anticipate future decisions about intensive care.
Outpatient clinic	Critically triage second opinions.
	Do all follow up appointments by phone (except when physical examination is necessary).
	When possible, reduce or delay the number of radiological-response evaluations.
	Prioritize oral or subcutaneous treatments above infusion-based treatments to reduce time spent in the hospital.
	Perform blood tests outside the hospital (e.g., at a general practice or at home), when possible.
	Have oral medications delivered to the patient's home, rather than being picked up at the pharmacy.

Table 1 | General consensus measures taken by CCE centers during the COVID-19 pandemic

Day care	Consider omitting supportive treatments (e.g., no bisphosphonate infusion, except in the case of hypercalcemia).
	When possible, organize the administration of intravenous maintenance treatments at home.
	When administration at home is impossible, consider temporary breaks or reductions in the frequency of intravenous maintenance treatments for less-aggressive metastatic cancers on a per-patient basis.
Radio-therapy	Consider hypofractionated regimens for patients with limited additional benefit of regular regimens.
	Create capacity for radiation as replacement of surgery.
Surgery	Consider postponement of surgeries with high morbidity and mortality during the pandemic.
	Consider other treatment modalities with equal benefit (e.g., radiation for prostate cancer, curative chemoradiation for other tumor types, or brain irradiation for metastases).
Other	Consider outsourcing of interventions (e.g., follow-up endoscopies) to private clinics.

Table 2 | The NHS scheme for prioritizing patients for systemic anticancer therapy by anticipated outcome

Priority Level 1	Curative therapy with a high (>50%) chance of success.
	Adjuvant (or neo) therapy that adds at least 50% chance of cure to surgery or radiotherapy alone or treatment given at relapse.
Priority Level 2	Curative therapy with an intermediate (20–50%) chance of success.
	Adjuvant (or neo) therapy that adds 20–50% chance of cure to surgery or radiotherapy alone or treatment given at relapse.
Priority Level 3	Curative therapy of a low chance (10–20%) of success.
	Adjuvant (or neo) therapy that adds 10–20% chance of cure to surgery or radiotherapy alone or treatment given at relapse.
	Non-curative therapy with a high (>50%) chance of >1 year of life extension.
Priority Level 4	Curative therapy with a very low (0–10%) chance of success.
	Adjuvant (or neo) therapy that adds a less than 10% chance of cure to surgery or radiotherapy alone or treatment given at relapse.
	Non-curative therapy with an intermediate (15–50%) chance of >1 year of life extension.
Priority Level 5	Non-curative therapy with a high (>50%) chance of palliation/temporary tumor control but <1 year of life extension.
Priority Level 6	Non-curative therapy with an intermediate (15–50%) chance of palliation or temporary tumor control and <1 year of life extension.

Caring for patients with cancer in the COVID-19 era

Organizational strategy to prepare for dynamic up- and downscaling.

During the pandemic, cancer centers may need to swiftly and dynamically adapt their downscaling strategies.

Quantifying COVID-19-related risks for patients with cancer.

Estimating the increased risk associated with anticancer therapy during the COVID-19 pandemic again depends on two central variables:

- (1) a patient's risk of COVID-19 over the course of the anticancer therapy, and
- (2) a patient's additional risk for serious complications or death, should the patient become infected.

Caring for patients with cancer in the COVID-19 era

Patient information and psychosocial care. Patients with cancer generally understand the severity of the pandemic and its impact on healthcare systems in general and on their health in particular, so they are often willing to accept all suggested preventive measures. **Anxiety among patients with cancer is currently high, nonetheless, and demand for counseling and mental-health assistance is skyrocketing.** The most-frequent questions and concerns speak to the risk of patients becoming infected or suffering from severe complications of COVID-19 because of immunosuppression. In addition, patients are concerned that potential healthcare-capacity issues may interfere with the optimal treatment of their disease. Addressing patients' concerns poses another challenge to CCE centers, as it requires urgent attention in order to maintain high-quality cancer care.

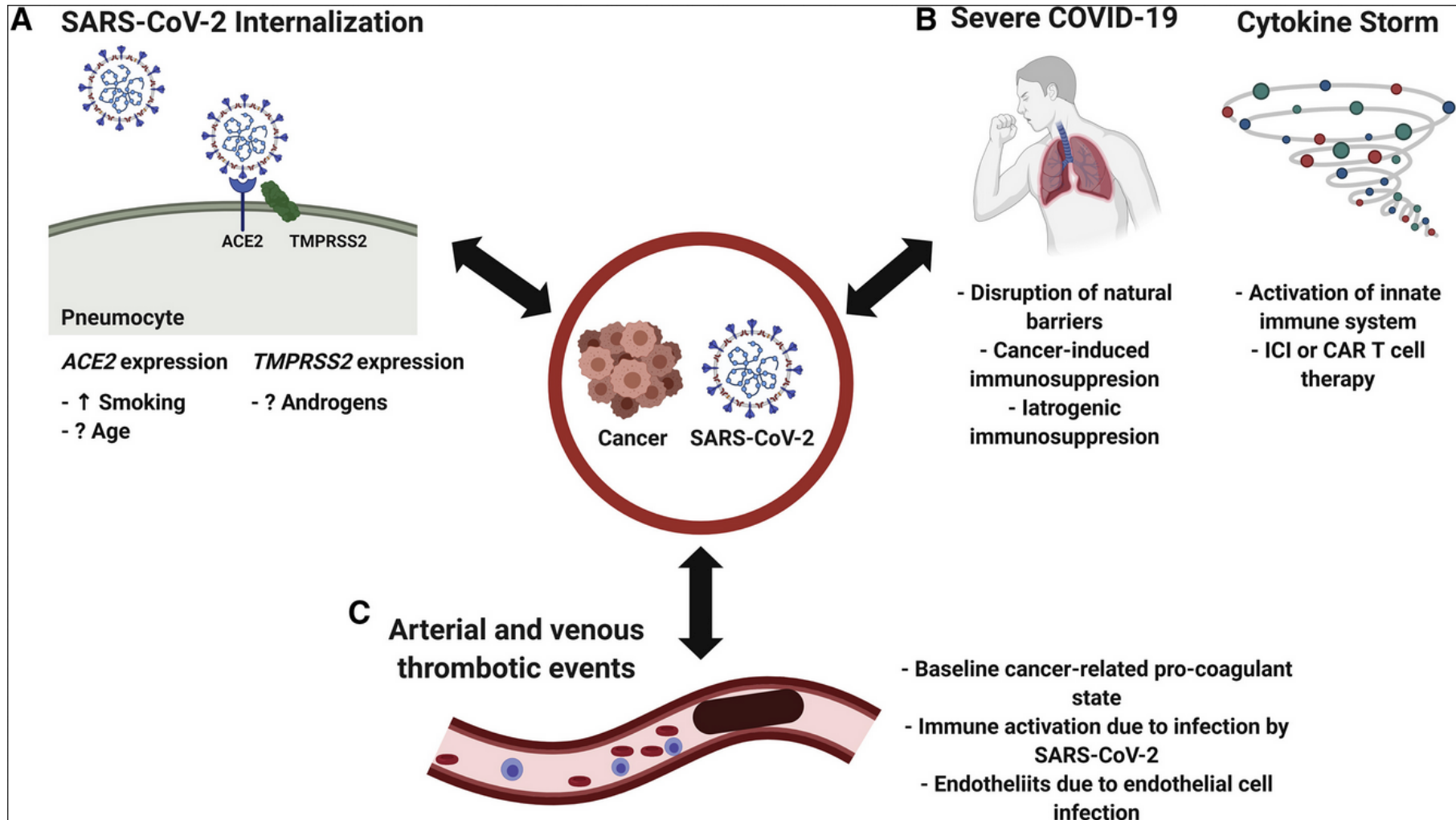
Review

COVID-19 and Cancer: Current Challenges and Perspectives

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Interplay of SARS-CoV-2 and Cancer Biology: Risks and Opportunities

Multiple pieces of evidence have indicated an interplay between the biology of SARS-CoV-2 and cancer (Box 1). Evidence suggests that patients with cancer are more likely to be infected by SARS-CoV-2, more likely develop a severe COVID-19 infection, and more likely to die as a result of COVID-19. In contrast, certain anti-neoplastic hormonal treatments have been suggested to potentially play a protective role in patients with SARS-CoV-2 infections.



The Interplay between SARS-CoV-2 and Cancer Biology. (A) SARS-CoV-2 internalization. (B) Immune interactions. (C) Arterial and venous thrombotic events.

Review

COVID-19 and Cancer: Current Challenges and Perspectives

Which Patients with Cancer Are Most at Risk?

- Lung cancer and hematologic cancers and advanced or active cancers are associated with adverse outcomes upon SARS-CoV-2 infection.
- There are currently conflicting data on the relationship between receipt of systemic anti-cancer therapies and COVID-19 outcomes in patients with cancer.
- Certain factors found to be associated with adverse outcomes in the general population were also associated with poor outcomes in patients with cancer, including male sex, increasing age, comorbidities, poor performance status, and smoking.
- In patients with cancer who develop COVID-19, markers of inflammation (IL-6, TNF- α), of organ damage (decreased albumin-globulin ratio and increased NT-proBNP), and of immune dysfunction (decreased lymphocytes and CD4⁺ T cells) were associated with adverse prognosis.



Clinical Characteristics and Outcomes in Patients with COVID-19 and Cancer: a Systematic Review and Meta-analysis

The pooled prevalence of cancer as a co-morbidity in hospitalised patients with COVID-19 was 6.7%, (I^2 : 82.3%) in Western countries.

The pooled in-hospital mortality risk among patients with COVID-19 and cancer was 14.1%

Impact of COVID-19 Pandemic on Ovarian Cancer Management: Adjusting to the New Normal

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Abstract [...] As the world faces the coronavirus disease 2019 crisis, the oncology community is being impacted unprecedented challenges. During this trying time, patients with ovarian cancer (OC) have been affected by a delay in diagnosis, surgery, chemotherapy and radiation treatments, and oncology follow-ups being conducted via telemedicine instead of in-person visits. OC patients and their oncologists are balancing the fears of COVID-19 and cancer treatment with the consequences of delaying cancer care. The delay in treatment care that women with OC are experiencing has resulted in higher levels of cancer worry, anxiety, and depression.

Angst und Depression bei Patientinnen mit Ovarian Cancer

Sorgen/Angst	89%
Angst – klinisch	>50%
Depression – klinisch	26%

Frey et al. 2020



„The restrictions further increased the social isolation and loneliness that negatively impacted physical and emotional health and wellbeing.“

Jacome et al. 2021

Wie geht es dem Gesundheitspersonal?

93 Studien zu Pflegepersonen (n= 93112)
zwischen Januar 2020 und September 2020 fanden

Stress	43%
Angst	37%
Depression	35%
Schlafstörungen	43%

→ Etwa 1/3 der Pflegepersonen litt unter
klinisch relevanten psychischen Symptomen

Al Magboli et al. 2021

Einsamkeit ist epidemisch

Humans are social creatures; our entire psychology is built on coexisting with each other. Social relationships guide our decisions to join groups, go to war, gain status, empathize, punish, marry, and mate. Having evolved this way means we suffer without the companionship of others.

Loneliness has real psychological and real physiological consequences. According to a **2015 meta-review of 70 Studies, loneliness has been linked to higher blood pressure and heart disease – and increases risk of dying by 26%.**

Up to Covid, loneliness was most acute in old age.

Traum vom Arbeiten daheim HOME OFFICE und die Ernüchterung

Am Anfang hat jeder die Verbannung in die eigenen vier Wände positiv wahrgenommen:

Eine Studie einer deutschen Krankenkasse vom September 2019 (vor Covid!) besagt, dass Home-Office durchaus problematisch für die Gesundheit sei. Die Leute werden nervös, Erschöpfung, Verärgerung, Rückenschmerzen, alles nimmt zu.

Psychische Gesundheit

Aus vielen Untersuchungen wissen wir mittlerweile, dass sich im vergangenen Jahr die psychische Gesundheit bei vielen Bevölkerungsgruppen international deutlich verschlechtert hat.

Die Gründe für die massive Verschlechterung der psychischen Gesundheit von Jugendlichen und jungen Erwachsenen sind vielfältig: die Folgen sozialer Isolation, die Unsicherheiten bezüglich der Zukunft (Ausbildung, Arbeitsmarkt usf)

„Ich habe oft Kopfwegh. Und ich habe auch Bauchschmerzen und manchmal wird mir ganz schlecht.“ (13-Jährige)

„Ich bin den ganzen Tag allein in meinem Zimmer. Es ist nicht leicht mich zu motivieren. Meine Eltern können mir auch nicht helfen, und ich will das auch nicht.“

„Aber ich komm nicht mehr mit beim Unterricht.

Mir fehlen meine Freunde. Ich halte das Alleinsein nicht mehr aus.“ (15-Jähriger)

„Ich schlafe im Bett und frühstücke im Bett. Wir haben nicht viel Platz in der Wohnung. Also sitze ich auch beim Distance-Learning im Bett. Und wenn ich abends Filme schaue oder mich virtuell mit Freundinnen treffe, sitze ich wieder im Bett. Ich habe das Gefühl, ich kann mich gar nicht mehr bewegen“. (16-Jährige)

Beengtes Wohnen

Depressive Symptome treten jetzt bei etwa 20 % der österreichischen Bevölkerung auf. Vor der Coronapandemie lag dieser Wert noch bei 4%.

Auch Angstsymptome oder Schlafstörungen sind aktuell auf dem Höchststand von 16%.

Besonders stark betroffen sind junge Leute. Verschärft wird die Situation durch beengtes Wohnen und geringes Einkommen zu Hause.

Die Folgen und Lehren aus der Coronakrise

Es gibt kein wissenschaftliches Messinstrument für die Wichtigkeit von individuelle und gemeinschaftlichen Interessen und Werten , somit auch keine auf Wissenschaft basierende Entscheidungshilfe.

Wenn über die Verhängung eines Lockdowns entschieden wird, reicht es nicht, die Frage zu stellen: „Wie viele Menschen werden an Covid-19 erkranken, wenn wir den Lockdown nicht verhängen?“ Wir müssen auch fragen: „Wie viele Menschen werden Depressionen bekommen, wenn wir den Lockdown verhängen? Wie viele Menschen werden an Unterernährung leiden? Wie viele werden die Schule versäumen und den Job verlieren? Wie viele werden von ihrem Ehepartner geschlagen und ermordet?“

Die Epidemie wurde von einer Naturkatastrophe zu einem politischen und wissenschaftlichen Dilemma.

Review

COVID-19 and Cancer: Current Challenges and Perspectives

Changes in Cancer Care Delivery

Telehealth

Screening and Diagnosis during the COVID-19 Pandemic

Cancer-Directed Therapy during the COVID-19 Pandemic

Clinical Factors, Biomarkers, and Prognostic Models: Which Patients with Cancer Are Most At Risk?

Although patients with cancer are now recognized to be at increased risk of adverse outcomes with COVID-19, this patient population is large and relatively heterogeneous. Identifying patients that are at particularly increased risk is essential for risk stratification, tailoring prevention measures, and cancer and COVID-19 treatment. As such, multiple studies have attempted to determine prognostic factors in patients with COVID-19 in general, or specifically within the subgroup of patients with pre-existing diagnoses of cancer (Table 1; Box 3).