

The impact of COVID-19 on the kidney cancer community

Report



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About IKCC

The International Kidney Cancer Coalition (IKCC) is an independent international network of over 40 patient organisations that focus exclusively, or include a specific focus, on kidney cancer.

Based in Amsterdam, The Netherlands, the organisation was born from a very strong desire among various national kidney cancer patient groups to network, cooperate and share materials, knowledge, and experiences around the world.

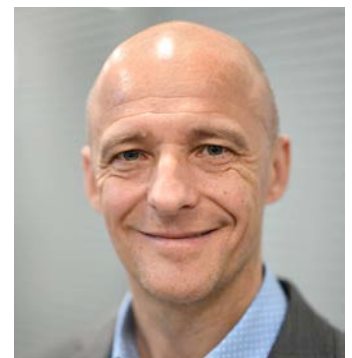
Kidney cancer is a global issue. Every year, an estimated 431,000 people worldwide will be diagnosed with kidney cancer. Research and clinical trials in kidney cancer take place across continents and many kidney cancer experts sit on international panels.

By working together and collecting the experiences of many patients in different countries, we represent the perspectives, insights and experiences of kidney cancer patients around the world and empower the kidney cancer community through advocacy, awareness, information and research.



Medical Reviewers:

Dr Rachel Giles (NL)
Dr Michael Jewett (CA)
Dr Eric Jonasch (USA)



Medical Writer:

Dr Sharon Deveson Kell (UK)



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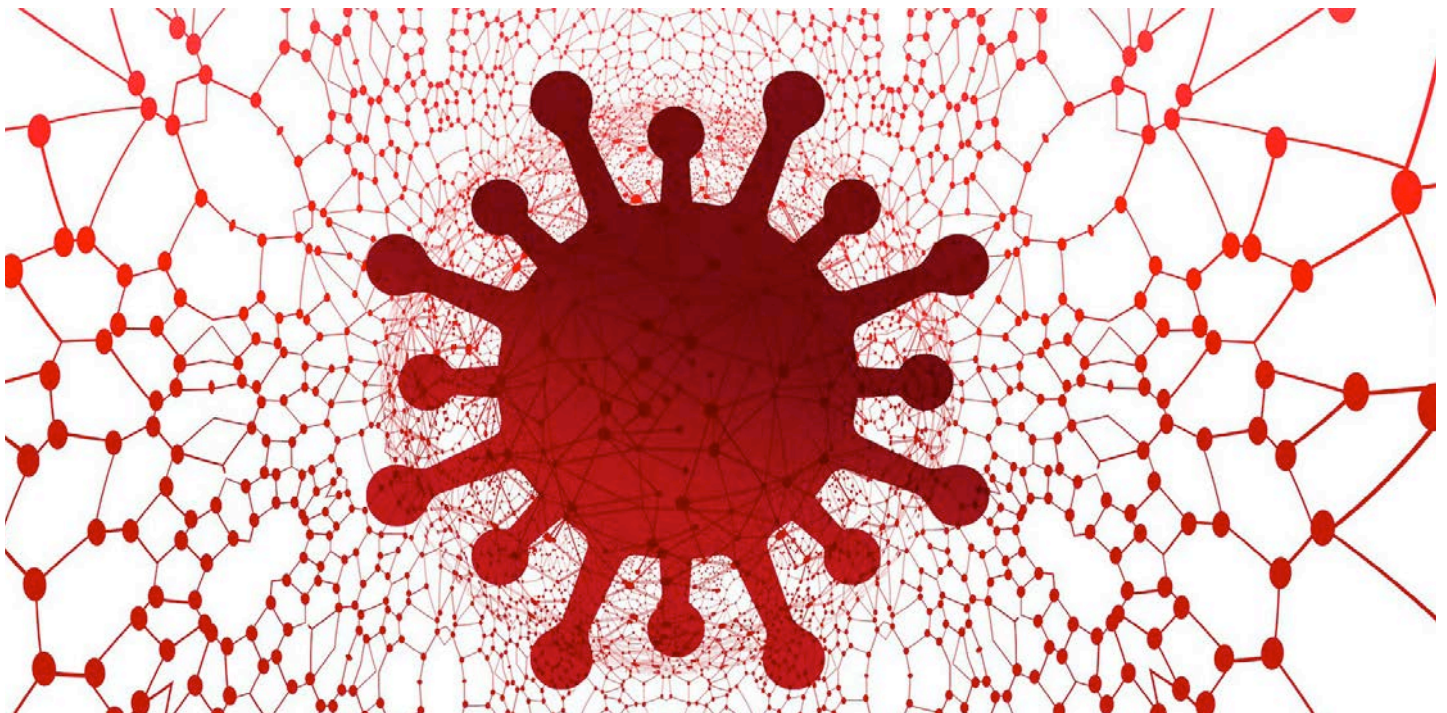
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Introduction

The emergence of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) in late 2019, and the impact of coronavirus disease-19 (COVID-19) on worldwide populations and economies is unprecedented. Since the outbreak began, nearly 200 million cases have been reported and over 4 million people have died from the disease. The outbreak has reached 222 countries and the number of infected people continues to rise globally¹. Cancer and its treatment can lower the ability to fight infection, leaving cancer patients particularly vulnerable.

This paper highlights the impact of the COVID-19 pandemic on the kidney cancer community. We report on presentations made at the IKCC Global Kidney Cancer Summit 2020², which gave insights from academics, physicians, and patients. We talk about the lessons learnt from the first wave of the pandemic in 2020 and discuss the impact of COVID-19 on the treatment and care of kidney cancer patients. Finally, learnings for the future are discussed from the perspective of a patient, research scientist, and surgeon.



Note: *The following paper was prepared by patient advocates for the benefit of patient organisations who focus on kidney cancer. While this report has been medically reviewed, the information contained herein is based upon public data and is not intended to be exhaustive. Patients should ask their physician about any information that pertains to their care.*

Insights from the IKCC Global Kidney Cancer Summit 2020

The impact of COVID-19 on people

SARS-CoV-2 is an RNA virus with an incubation period of up to 14 days and is transmitted in respiratory droplets. Some infected people appear asymptomatic. Contact tracing and isolation are critical to control the spread of the virus².

SARS-CoV-2 suppresses parts of the immune system (type 1 interferon response) but activates the immune system as a whole and can cause cytokine storms. It also causes inflammation and silent hypoxia (low blood oxygen levels without shortness of breath), all of which can cause death. Risk-factors include certain comorbidities, smoking, immunosuppression therapy, age, race (Hispanic/Asian), cancer and pregnancy.

Vaccination, face masks, social-distancing, screening, contact tracing, hand hygiene, personal protective equipment (PPE), enhanced cleaning, and COVID-19 testing can be used to control the virus. SARS-CoV-2 is here to stay. Masking and social distancing will continue beyond 2021 and into 2022 in countries without a successful vaccination programme or herd immunity.

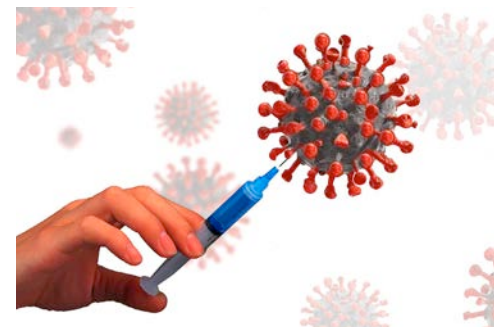
The impact of COVID-19 on research

The pandemic disrupted clinical trials worldwide, with around 80% of non-COVID trials being stopped or interrupted in 2020³.

For those trials that were able to continue, every effort was made to keep patients from harm, applying telemedicine where possible, reducing patient volume to avoid busy waiting rooms, and the establishment of COVID-free trial units. The start of new clinical trials was delayed, and recruitment declined as patients were discouraged from travelling to hospitals, especially during the first half year of the pandemic. There has also been an unprecedented re-orientation of clinical research to COVID-19, as over 5,500 COVID-related trials have been initiated³.

The pandemic saw research laboratories mostly halt non-essential work with redeployment of investigators and staff, followed by a phased return to work with COVID-19 tests, or virtual homeworking. The pandemic impacted laboratory work, training, and hiring. Billions of dollars were diverted causing reduced resources for research, and a freeze in hiring. This will affect young researchers and new treatment discoveries in the years to come².

*“Around 80%
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The impact of COVID-19 on kidney cancer patients

Some data have allowed cautious conclusions to be drawn regarding the specific risks COVID-19 might have for kidney cancer patients or survivors. Much more will be learned in coming years. Kidney cancer survivors are not at greater risk of catching SARS-CoV-2. Healthy people with one kidney have a similar risk of catching the virus as someone with two kidneys. However, cancer survivors have higher risk of developing severe COVID-19, compared to people with no history of cancer⁴. Most kidney cancer patients or survivors do not have chronic kidney disease, and therefore their other co-morbidities will play a greater role in determining the severity of COVID-19 outcomes. Those at greater risk of developing complications due to COVID-19 need to follow social distancing or shielding guidelines until they are vaccinated⁵.

Nevertheless, subgroups of kidney cancer patients may be at elevated risk for worse outcomes. Some patients with multiple lesions or bilateral disease (such as individuals with hereditary kidney cancer syndromes) may have undergone a kidney transplantation, and transplant recipients have been shown to experience high COVID-19-related mortality, in addition to reduced protection from vaccination^{6,7}. Likewise, patients on systemic therapy for metastatic disease are likely to have inappropriate immune responses. This increases the risk of getting COVID-19 and developing symptoms. Medicines such as immunotherapy and corticosteroids, and cancer that is growing or spreading (metastasising) can result in immunosuppression and a higher risk of COVID-19 compared to a healthy population⁵.

Other potential risks for kidney cancer patients result from delays in diagnosis resulting in more late-stage presentations, delays to cancer surgery, and the inability to receive necessary medical services and normal medical care in hospital. During the first peak of the pandemic, some hospitals shut down. Relatives could not visit, and some were travelling miles for treatment. Follow-up was via local hospitals or telemedicine. Patients were advised to self-isolate, wear a mask and socially distance².

The impact of COVID-19 on kidney cancer treatments

Initially, considerable uncertainty pertaining to the safety of patients in hospitals, coupled with the fact that patients were hesitant or discouraged from visiting hospital for immunotherapy treatment and/or surgery, led to delays in treatment initiation and/or continuation. This was exacerbated in early 2020 by the scarcity of COVID-19 testing, lack of personal protective equipment (PPE), and general lack of knowledge. Hospital infection risk lowered as screening and self-isolation started, and COVID-free wards were introduced².

Consequently, some advanced RCC patients were switched to oral therapy from intravenous therapy or were switched to monotherapy instead of combination therapy. The number of newly diagnosed patients dropped significantly, although this trend was not unique to kidney cancer. Biopsies were disrupted and have not yet caught up².

As discussed at the IKCC Global Kidney Cancer Summit 2020, targeted therapy and immunotherapy are essentially safe⁸. The diagnostic and treatment backlogs need to be addressed, especially surgery as hospital infections recede and vaccination programmes take off^{9,10,11}. However, face-to-face contact still needs to be minimised. Patients who have not been vaccinated may need to shield to protect themselves from the virus².

For patients with metastatic kidney cancer and COVID-19, depending on the severity of the infection, the advice is to pause medical treatments for kidney cancer until the COVID-19 symptoms improve and the acute phase of the infection is over. For severe cases of COVID-19, some medications for metastatic kidney cancer (especially immune checkpoint inhibitors) may be harmful and will need to be delayed until the infection has improved⁵.

Lessons learnt from the first wave of the pandemic in 2020

When SARs-CoV-2 first emerged, it was thought that COVID-19 was a severe form of a common illness, such as influenza or respiratory syncytial virus (RSV), and it was treated as such. However, scientists quickly realised that transmissibility and disease severity were more aggressive, and within a matter of weeks an unprecedented pandemic was declared. Important lessons were quickly learnt from the impact of the first wave of the pandemic.

In many countries, cancer patients were safer in hospital than in the community because of the precautions taken to prevent the spread of the disease e.g., COVID-free hubs, testing, social distancing, PPE etc. However, there were different practices/guidelines between countries and within countries. At the start of the pandemic, guidelines could not keep up with changes in practice. Some hospitals had acute assessment units for COVID-19 patients to isolate them from other patients, while many others did not. Hospitals need to be kept safe with infection control procedures and cancer patients should be receiving as close to standard care as possible^{2,5}.

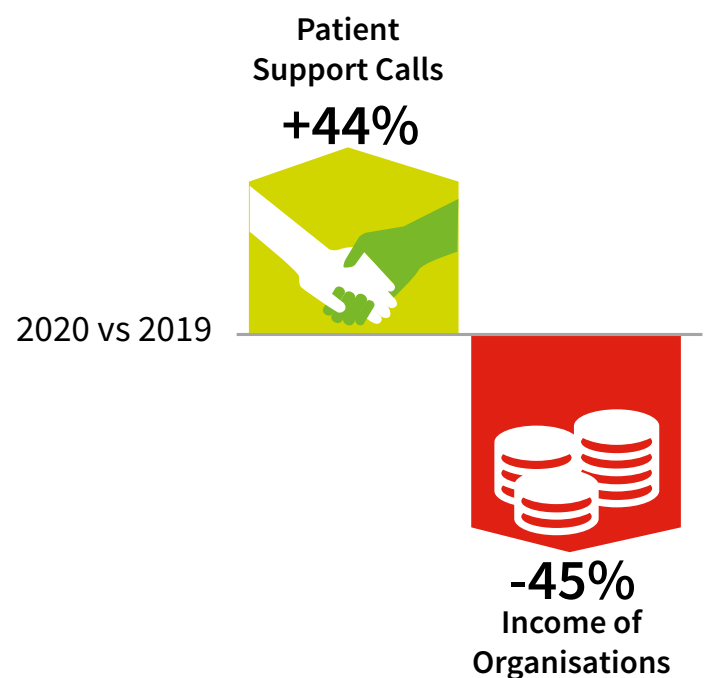
Many governments introduced restrictions to prevent transmission of the virus, such as the use of masks, social distancing, hand hygiene, lockdowns, and prevention of large gatherings. These precautions were followed for many months and continue to be followed in those countries with high transmission rates. The number of cancer patients coming into hospital for treatment dropped considerably during lockdowns. However, hospitals need to keep diagnostic pathways safe and running and there needs to be a balance between COVID-19 and cancer care.

Younger people are at very low risk from COVID-19¹². Collective responsibility of communities to prevent the spread of the virus and enforced lockdowns to protect the vulnerable may cause social unrest and economic hardship for people whose risk is very low².

Cancer services need to address the backlog of cancer patients. Patients are presenting with more advanced disease, which will ultimately lead to an increase in cancer deaths¹³. Patients will miss treatment and outcomes will suffer².

The virus, its natural history, interventions to reduce mortality⁴, and how we can mitigate future pandemics are important learnings. Community spirit for tackling the virus has been very humbling and the vulnerability of humanity has been exposed².

A survey of 157 organisations representing advanced breast, bladder, lymphoma, ovarian and pancreatic cancer patients presented at the European Society of Medical Oncology (ESMO) last year found an average increase in patient support calls of 44%. This survey identified a substantial need for psychosocial support and information from patient organisations, who had to adapt their service provision for evidence-based information. However, despite this huge increase in demand for services, income has dropped and more than 45% of the organisations surveyed face a financial burden that threatens the future of their work¹⁵.



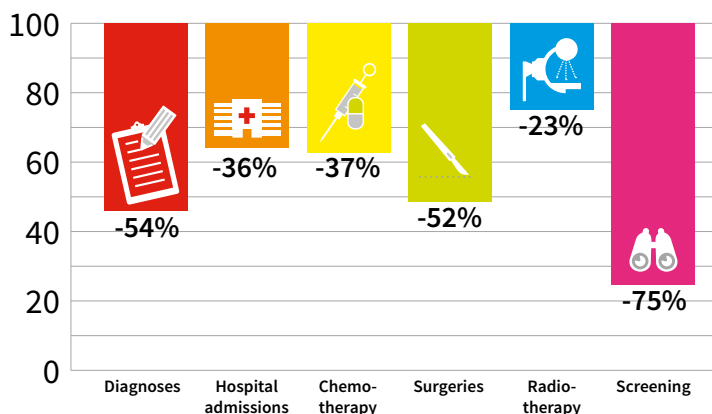
Compared with 2019 data from 157 patient organisations¹⁵, 2020 saw an increase in demand for patient support, and a drop in income.

The impact of COVID-19 on the treatment and care of kidney cancer patients: a research overview

Since the first wave of the COVID-19 pandemic in 2020, the disease has persisted causing peaks of infection around the world. This has pushed healthcare systems to their limits, many of which now face multiple challenges due to the various COVID-19 restrictions imposed worldwide.

The data for the risk of severe illness from COVID-19 infection for kidney cancer patients remains limited. However, examining the kidneys of patients who have died of COVID-19 has indicated extensive injury to the kidneys from the virus¹⁶. In a study from China, cancer patients had an increased risk of severe COVID-19. However, the number of patients in this study was very small, and it is hard to know whether this applies to all types of cancer¹⁷. Another study from Germany indicated that the incidence of SARS-CoV-2 in patients with advanced genitourinary cancer, including kidney cancer, was nearly 10% higher than in the general German population. COVID-19 infection did not have symptoms or was mild in these patients, and not influenced by treatment with immunotherapy. The researchers recommended routine COVID-19 screening for advanced patients¹⁸.

COVID-19 infection in cancer patients is influenced by immunosuppression caused by cancer treatments and other comorbidities. These patients are more likely to develop COVID-19 infection due to frequent hospital admissions, which might explain a slightly higher death rate (17%) seen in patients with genitourinary cancers and COVID-19 infection compared to people of a similar age without cancer¹⁹. As the pandemic continues, additional cohort studies will hopefully provide more data.



Regular cancer patient care was severely disrupted in India between March-May 2020 as a result of COVID-19²²

Diagnosis, treatment, and follow-up of kidney cancer patients

There have been significant delays and cancellations of diagnoses and treatment resulting in backlogs of cancer patients. Every hospital has different criteria for deferring treatment and scans, but in general this is based on COVID-19 risk^{5,17}. This backlog has increased the existing strain on healthcare systems and professionals, as well as reducing early diagnosis leading to more advanced disease and poorer outcomes for cancer patients⁹. For kidney cancer specifically, all diagnoses and follow-up are imaging-dependent and hospital appointments are necessary.

The number of new diagnoses in 2020 were significantly lower than in 2019⁹. For example, cancer diagnoses dropped by about one third in the Netherlands¹⁰ and there were 50,000 'missing diagnoses' in the UK¹¹. In Europe, there are 1.5 million fewer cancer patients, up to 1 million cancer patients remain undiagnosed, and there were 100 million fewer screening tests conducted in 2020^{20,21}. During the first wave of the pandemic in Europe, around half of all cancer patients did not receive the right treatment at the right time, and in 2021 about one-fifth of patients still experience delays in receiving treatment^{20,21}.

In India, the number of new cancer diagnoses decreased by more than a half (54%), and follow-up visits also declined 46% from 1 March through 31 May 2020. Cancer-related hospital admissions decreased by more than a third (36%), as did outpatient chemotherapy (37% reduction). Surgery was also affected, and both major and minor cancer surgeries dropped by a half (49% and 52%, respectively). Access to radiotherapy and pathological diagnostic tests reduced 23% and 29%, respectively, and radiological diagnostic tests by 43%. Cancer screening was stopped completely or was less than 25% of usual capacity at most centres. Cancer services were affected more in the larger cities. The COVID-19 pandemic has had considerable impact on the delivery of oncology services in India. The long-term impact of the effect on cancer screening and delayed hospital visits on patient outcomes is yet to be determined²².

Having a partial or radical nephrectomy does not increase the risk of getting COVID-19 or becoming seriously ill from COVID-19. The most important factor is kidney function. If kidney function is normal or near normal, then patients with kidney cancer should not be at increased risk of COVID-19^{5,17}. If kidney function is poor, patients are advised to ask their clinician about their level of risk¹⁷. Also, in addition to kidney function, conditions such as chronic respiratory disease, cardiovascular disease, diabetes, or obesity increase the risk of severe COVID-19.

The use of immunotherapy has declined during the pandemic²³. Immune checkpoint inhibitors can stay in the body for several weeks. Survival is not affected in kidney cancer patients who have a break in treatment due to side effects compared with patients who stay on treatment. Therefore, if a patient skips one or two infusions, these can be made up when it is safe to go into hospital¹⁷.

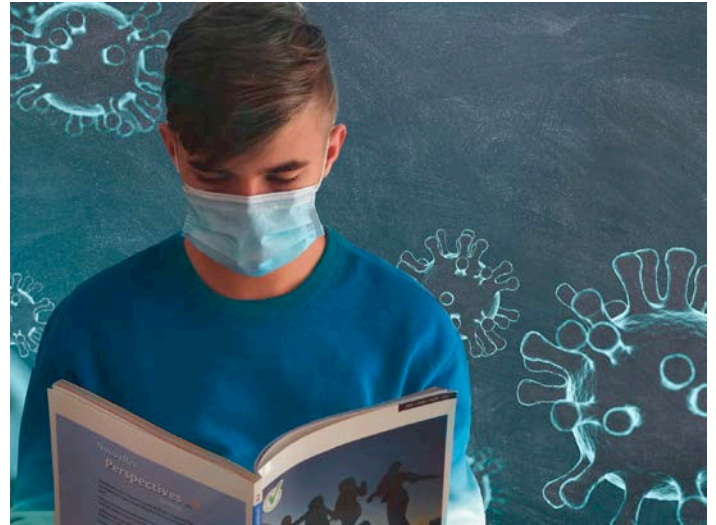
For patients with favourable risk advanced or metastatic disease according to the International Metastatic RCC Database Consortium (IMDC) criteria, active surveillance may be recommended. When these patients need to start systemic treatment, single agents, such as vascular endothelial growth factor (VEGF) inhibitors could be used²³.

For patients with intermediate or poor risk metastatic disease, a combination of immunotherapy plus VEGF inhibitor (pembrolizumab/axitinib or avelumab/axitinib) might lower the risk of immune-related side effects and steroid use compared to immunotherapy combinations (nivolumab and ipilimumab)²³. However, the risk of exposure to COVID-19 must be balanced with the risk of immunotherapy treatment since these treatments require regular hospital visits for infusion and the use of high dose steroids to treat immune-related side effects may suppress the immune system and put patients at increased risk of contracting viral infections²⁴. A systematic review and meta-analysis determined that anti-cancer therapies such as surgery, chemotherapy, immunotherapy, and targeted therapy do not increase the severity and mortality of cancer patients with COVID-19²⁵.

For locally advanced RCC, it might be pertinent to avoid adjuvant sunitinib and subsequent side effects that might require more frequent hospital visits²³.

Routine follow-up scans for kidney cancer patients without symptoms may be safely delayed. There is no evidence that identification of an asymptomatic recurrence a few months earlier will impact outcomes. Those patients who are doing well on kidney cancer medication for some time can also delay follow-up scans. Scans are advised for patients with significant symptoms to monitor cancer progression^{5,17}. How long these systems need to be in place depends on the course of the pandemic¹⁷.

Younger people are at very low risk from COVID-19, with children often remaining largely symptom-free¹². Likewise, RCC is extremely rare in children, comprising approximately 2% to 6% of all paediatric renal tumours²⁶, and renal tumours in general are the fifth most common tumours affecting children overall²⁷. Although rare, children have been affected by kidney tumours during this pandemic, but specific data for these patients is lacking.



It has been recognised that COVID-19 has created an enormous mental health burden on children and adolescents, either by its direct effect or because of the unique combination of social isolation, economic recession, and school closures with remote learning further eroding an essential exposure to formative childhood social interactions²⁸.

However, younger-onset RCC patients did feel the effects of the pandemic on their care, especially since younger RCC patients are often affected by hereditary RCC syndrome, such as von Hippel-Lindau disease (VHL). In a recent national survey of VHL patients (www.vhl.org), nearly half (48%) reported that important, scheduled appointments, including surgery, had been recently cancelled or rescheduled. Of these people, more than half (58%) indicated that the change was due to the COVID-19 public health crisis²⁹. The longer-term effects on younger patients with kidney tumours has yet to be determined but warrants additional research.

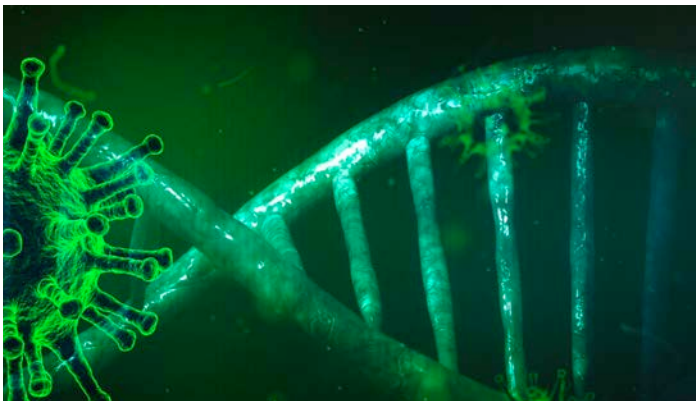
Providing support and advice about treatment throughout the pandemic has been essential to overcome the concerns of patients. There was a lot of uncertainty about the safety of patients attending hospital appointments, and many patients experienced a break in immunotherapy treatment. In a survey by the Kidney Cancer Research Alliance (www.kccure.org) of >500 patients with RCC in the USA, 71% of the participants felt that they were at a high risk of contracting COVID-19; however, 50% were either unwilling or very unwilling to miss an infusion of systemic therapy, and 64% were anxious about disease progression if this treatment was delayed (KCCure patient survey)^{30,31}.



Potential treatments for COVID-19

Since the emergence of SARS-CoV-2, there has been great progress in understanding the disease and in vaccine development. However, it is still not understood why some people infected with SARS-CoV-2 develop respiratory failure, while others have mild, or even asymptomatic disease. Treatments for COVID-19 have focussed on modulating the immune response to SARS-CoV-2. However, human genetic variation and viral variants has made this approach to treatment difficult³². It is likely that future treatments will rely on treating the right patient at the right time and understanding this heterogeneity in the treatment of patients with COVID-19.

Recently, a precision-based approach to immunotherapy treatment has been suggested, based on the systemic inflammatory response of patients or their state of immunosuppression³². Patients with COVID-19 would be assessed genetically for inflammatory response, immunosuppression, or biological markers for blood clotting function (coagulopathy) and coronary artery disease. This might help to identify subgroups of patients who are responsive to treatment. COVID-19 variants based on immunological markers might also be of interest for the timing and type of immunotherapy. The different SARS CoV-2 variants and their effect on patients requires further investigation. In the future, clinical practice may involve the use of targeted therapies based on the biology and genetic make-up of patients. Until then, clinical trials must be carefully planned to acknowledge and better understand the immune response to SARS-CoV-2 and the implications of this for the treatment of cancer patients³².



Lifestyle and mental health

A survey in Europe reported an overall increase in risky behaviour linked to a higher risk for developing cancer, such as smoking and alcohol consumption⁹. There were also reductions in healthy lifestyle habits, such as keeping to a healthy diet and taking physical exercise, most of which are potential risk factors for kidney cancer. This was partly due to imposed lockdown restrictions during the pandemic⁹. Patients' financial hardship also markedly increased during the first year of the pandemic, as economies shrank and employment reduced³³.

The mental health of cancer patients, carers and family members also suffered during the pandemic. This resulted in increased stress, anxiety, isolation and other psychological traumas^{9,34}, particularly during lockdown periods. This was reflected in the increase in support services offered by kidney cancer patient organisations, where the number and complexity of contacts increased considerably as patients were unable to get support from their healthcare team. This was confounded in some countries by the restrictions placed on family members for visiting patients in hospital and accompanying them to hospital appointments.

Cancer research

Cancer research has been stalled as resources are diverted to study various aspects of the pandemic, to develop vaccines and treatments for COVID-19^{2,35}, and even research into public spaces³⁶. Resources are also shifting to remote data analyses, such as retrospective studies, meta-analyses of existing studies, systematic reviews, and real-world registry studies. However, the pandemic has increased the use of innovative health technologies (e.g., telemedicine) to help reduce patient risk by attending hospital appointments, and stimulated restructuring of healthcare systems for future health crises⁹.

New clinical trials were either delayed or suspended, and the recruitment of patients into ongoing clinical trials was restricted. Data processing was low priority as research staff were redeployed to critical COVID-19 care. Healthcare professionals looked for new ways to continue to care for patients on clinical trials, such as telemedicine and other health technologies⁹.

Healthcare workforce

In some countries, the COVID-19 pandemic exacerbated and highlighted pre-existing shortages in specialised medical workforce. The pandemic also worsened the pressure on already overwhelmed healthcare systems and significantly impacted the mental health of healthcare professionals and hospital workers under stressful working conditions, and long hours that continued for many months³⁷. Many healthcare workers were redeployed to help with COVID-19 patients.

“In Europe, it was estimated that around 40% of healthcare professionals experienced burnout and 30% had depression.”

burnout and 30% had depression because of the pandemic, and most are not seeking help for their mental health^{17,18}.

As a result, healthcare professionals experienced higher than usual levels of stress, depression, and anxiety, leading to burnouts and time off work⁹. In Europe, it was estimated that around 40% of healthcare professionals experienced

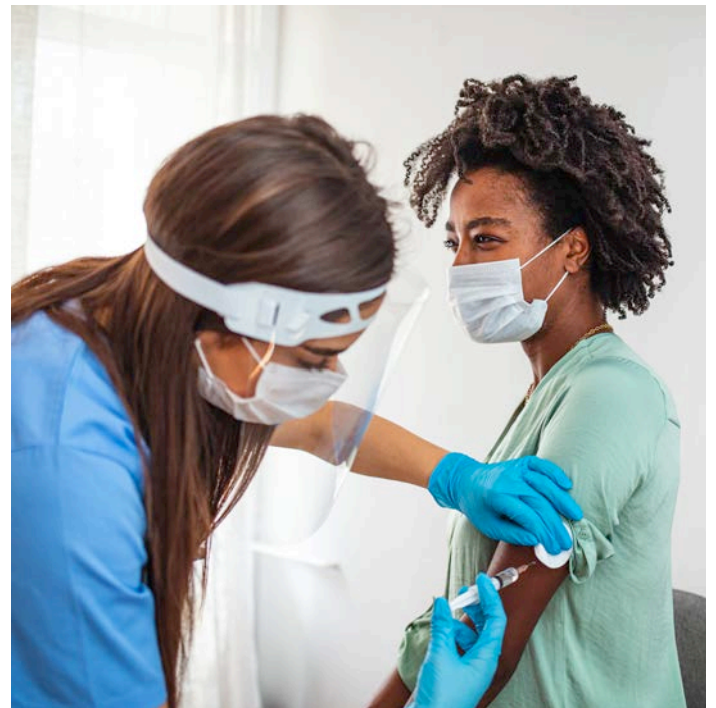


Vaccination and cancer patients

Very little is known about the vaccination of cancer patients with the COVID-19 vaccines. However, based on information about the influenza vaccine we know that vaccines provide slightly less protection to cancer patients than the healthy population. There is very little data on the interaction of targeted therapy and immunotherapy with vaccines, but what little data there is shows vaccination works well for cancer patients on these treatments and there is no increase in immune-related side effects for patients taking immunotherapy. There was a suggestion that cancer patients may need more frequent boosters of the COVID-19 vaccine to maintain its effectiveness over time³⁸.

There are no obvious safety or efficacy concerns, but more data are needed regarding the effect of cancer treatments on the effectiveness and safety of the COVID-19 vaccine. Timing of vaccination within the cancer treatment cycle is unclear, as is duration of immune response. It is better to vaccinate before the patient becomes immunosuppressed, but the vaccine can be given during cancer treatment. There may be a blunted immune response, but it will still reduce the risk of severe disease³⁸.

Immunotherapy side effects may be more pronounced following vaccination and it is advised to avoid vaccination on the same day as immunotherapy treatment and to have the vaccination in the week before. Cancer patients may lose immunity quicker than the healthy population because they are immunosuppressed³⁸.



Perspectives

We consulted experts in kidney cancer to collect their reflections from the pandemic over the past year. Three experts were interviewed: a kidney cancer patient advocate, a researcher, and a urologist, to gather their views from the countries where they worked. We explored the impact of COVID-19 on the care and management of kidney cancer patients, and the kidney cancer research environment. What follows are the main themes from these interviews:

Patient advocate perspective

At the start of the pandemic there was not enough information about COVID-19 and no guidance for kidney cancer patients, who were considered extremely vulnerable. Patients were unable to contact their GP or healthcare team, and all focus was directed to COVID-19 patients. Cancer patients felt a burden to their health service and were being told to stay home to protect capacity. Early in the pandemic there were failures, e.g., lack of PPE, ventilators, intensive care beds etc. which undermined patient confidence in the health service. Patients felt like “leaves blown around in the wind”. There were inconsistencies in kidney cancer treatment, further undermining patient confidence. The consequences of this were addressed by patient support organisations because patients felt abandoned, a feeling that was made worse by lockdown, enforced shielding and isolation.

“Patients felt like leaves blown around in the wind”.

Rose Woodward, Founder and Patient Advocate, Kidney Cancer Support Network, UK

Research perspective

During the first year of the pandemic, research was impacted greater than ever before and at all levels. Laboratories were closed for non-essential research and people asked to work from home. However, on a positive note this gave researchers time to stop and think about innovative approaches to research and apply for grants. When research picks up again, there will be a new generation of scientists with a fresh approach. However, training has been interrupted, and a huge talent loss, as it is estimated that up to 15% of research programmes may not re-start. There will be a dip in research output in the short term, but more novel approaches due to alliances and collaborations in the long term.

“It is estimated that up to 15% of research programmes may not re-start.”

Many clinical trials were halted from March through July 2020, and researchers introduced flexibility in trial design, e.g., remote screening and follow-up, scans/bloods conducted at local hospitals to reduce travel. This reduced patient anxiety, but patients were lost to follow-up. About half of patients affected by hereditary kidney cancer, such as VHL patients, reported substantial disruption of their standard screening procedures and planned interventions²⁹. Funding was directed away from cancer research to epidemiological studies, as well as COVID-19 research.

“Funding was directed away from cancer research to epidemiological studies, as well as COVID-19 research.”

One controversial redirection of research resources, at least in parts of Europe, involved investigating the spread of the virus at large events like football matches and concerts (so-called Fieldlab events³⁹) in which about 233,000 people participated at a cost of 1.1 billion Euros in the Netherlands alone⁴⁰.

However, the nature of COVID-19 disease has generated some good data about hypoxia, cytokine storm, and inflammation, which are all potentially applicable for kidney cancer research. Research resources were redirected, but not always appropriately, and we need to see research programmes reinstated.

Dr Rachel Giles, Associate Professor of Internal Medicine, University Medical Centre Utrecht, Medical Science Officer at Medicom Medical Publishers Chair of the Dutch VHL Patient Organisation (Belangenvereniging VHL) Chair of the IKCC, the Netherlands

Urologist perspective

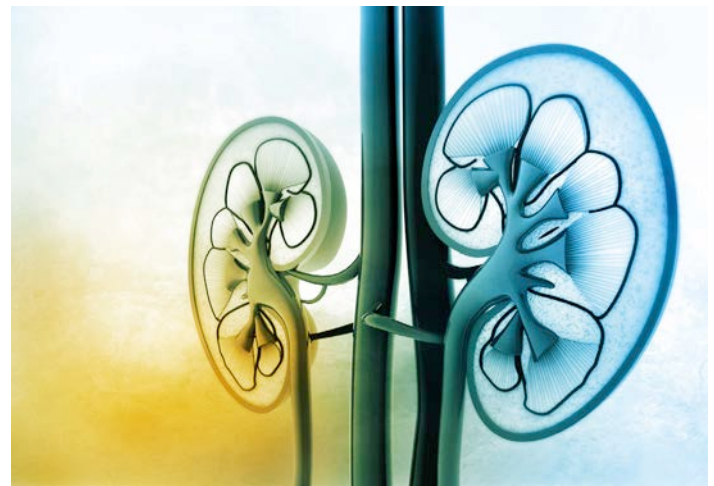
COVID-19 brought both economic and healthcare challenges. All patients took a PCR test 3-5 days before being admitted to hospital for treatment⁴¹. The hospital not only had to protect patients, but healthcare workers too. Treatment was tailored to individual patients depending on their performance status and stage of disease⁴². The main risk factors for COVID-19 are like those for kidney cancer (obesity, smoking, age) increasing the risk for these patients. Patients with early stage T1 tumours were put on active surveillance, those with T3 tumours had surgery immediately, and those with T1b-T2 tumours were assessed for COVID-19 risk and surgery performed according to risk, health, and age. Elderly or sick patients were put on watchful waiting. Patients with high grade tumours or hereditary kidney cancer e.g., VHL or HLRCC, were given surgery. Patients with metastases were treated with sunitinib or immunotherapy before surgery and the response monitored before a decision was taken to operate. The risks and benefits of surgery during the pandemic were carefully explained to the patient beforehand. COVID-19 has had a huge impact economically and many people are now unemployed. About a quarter of the population have lost health insurance and cannot afford treatment.

“About a quarter of the population have lost health insurance and cannot afford treatment.”

Dr Stênio de Cássio Zequi, Division of Surgery,
A. Camargo Cancer Center, São Paulo, Brazil

Conclusions

This paper highlights the impact of the COVID-19 pandemic on the kidney cancer community. We report on the impact it has had on patients, their lifestyle and mental health as they shield from COVID-19; the impact on cancer patient organisations; the effect on cancer research with up to 80% of clinical trials being stopped or interrupted; and the influence on kidney cancer diagnosis and treatments leading to a backlog of patients waiting to be seen. On a positive note, lessons learnt from the first year of the pandemic in 2020 drove the development of new ways of kidney cancer management, such as telemedicine and virtual consultations. Finally, learnings for the future are discussed from the perspectives of a patient, a research scientist, and a surgeon.



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IKCC

International
Kidney Cancer
Coalition

International Kidney Cancer Coalition

Registered Office:

't Ven 30

1115HB Duivendrecht,

The Netherlands

Email: info@ikcc.org

Website: www.ikcc.org

www.worldkidneycancerday.org



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