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How did we take care of our older cancer patients during the first COVID 19 wave? the French Experience.

Quelle prise en charge pour nos patients âgés atteints de cancer durant la 1^{ère} vague de la COVID19 ? L'expérience française.

**Carole HELISSEY^{1*}, Djamel GHEBRIOU², Anatole CESSOT³, Laurys BOUDIN⁴,
Caroline PRIEUX⁵, Emilie ROMEO⁴, Anotine SCHERNBERG⁶, Noémie GRELLIER⁷, Charlotte JOLY⁸, Olivier BAUDUCEAU⁹, Constance THIBAUT¹⁰, Elodie MAMOU¹,
Gauthier RAYNAL¹¹, Sophie SEREY EIFFEL¹¹, Hervé LE FLOCH¹²,
Damien RICARD¹³, Laurent BRUREAU¹⁴**

Affiliations

¹ Clinical Research unit, Military Hospital Begin, 69 Avenue de Paris, 94160 Saint-Mandé, France

² Department of Oncology, Tenon University Hospital, Institut Universitaire de Cancérologie AP-HP.Sorbonne Université, 4 Rue de la Chine, 75020 Paris, France

³ Department of Medical oncology, Clinique Hartmann, 26 bd Victor Hugo, 92200 Neuilly-Sur-Seine, France

⁴ Department of Medical oncology, Military Hospital Sainte-Anne, 2 Boulevard Sainte-Anne BP600, 83000 Toulon, France

⁵ Department of Gastroenterology, Military Hospital Percy, 2 Rue Lieutenant R. Batany, 92140 Clamart, France

⁶ Department of Radiation Oncology, Hôpital Tenon, 4 Rue de la Chine, 75020 Paris, France

⁷ Department of Radiation oncology, Hôpital Henri Mondor, 1 Rue Gustave Eiffel, 94000 Créteil, France

⁸ Department of Medical Oncology, Hôpital Henri Mondor, 1 Rue Gustave Eiffel, 94000 Créteil, France

⁹ Department of Radiation Oncology, Clinique Hartmann, 26 bd Victor Hugo, 92200 Neuilly-Sur-Seine, France

¹⁰ Department of medical oncology, HEGP, APHP.Centre, 20 Rue Leblanc, 75015 Paris, France

¹¹ Department of Urology, Clinique Métivet, 48 Rue d'Alsace Lorraine, 94100 Saint-Maur-des-Fossés, France

¹² Department of Pulmonology, Military Hospital Percy, 2 Rue Lieutenant R. Batany, 92140 Clamart, France

¹³ Department of Neurology, Military Hospital Percy, 2 Rue Lieutenant R. Batany, 92140 Clamart, France

¹⁴ CHU de Pointe-à-Pitre, Univ Antilles, Univ Rennes, Inserm, EHESP, Irset (Institut de Recherche en Santé, Environnement et Travail) – UMR-S 1085, F-97110 Pointe-à-Pitre, France

*** Corresponding author : Carole HELISSEY**

Clinical Research Unit, Military Hospital Begin, 69 avenue de Paris, Saint-Mandé, 94160, France

Email: carole.helissey@gmail.com

ABSTRACT

Background: The management of older cancer patients has been highly challenging for clinicians in a health-care system operating at maximum capacity during the COVID19 pandemic. **Patients and Methods:** We analyzed data from 9 different institutions. The primary endpoint was to assess the prevalence of adapted patient care during the pandemic for elderly cancer patients. The secondary endpoint was to assess the incidence of hospitalization and mortality due to COVID19. All patients were older than 65 years of age. **Results:** We analyzed data from 332 outpatients' case files between 9th of March and 30th of April 2020. The median age was 75 years (range, 65 – 101) and 53% were male. Because of the COVID-19 pandemic, more than half of the outpatients received modified patient care, defined as postponement or cancellation of surgery, irradiation scheme adapted, systemic treatment or the use of telemedicine. Among patients with localized cancer, 60% had a change in management strategy due to the pandemic. Changes in management strategy were made for 53% of patients at the metastatic stage. The use of GCSF was remarkable, at 83% of patients, and increased considerably in the context of the pandemic. 69% of physicians used telemedicine. In the final analysis, only one patient was hospitalized for COVID19 infection. No deaths due to COVID19 were reported. **Conclusion:** Our study is the first to assess modification of patient care in elderly cancer outpatients during an epidemic. With this unprecedented crisis, our objective is to protect our patients from infection via protective barrier measures and social distancing, but also to guarantee the continuity of cancer care without overexposing this fragile population. Physicians were able to adapt their practice and used new forms of management, like telemedicine. **Keywords:** Pandemic COVID-19, elderly cancer patient, patient care

Résumé

Introduction : La prise en charge des patients âgés atteints de cancer fut très difficile pour les cliniciens durant la première vague de la pandémie COVID19. En effet, ils ont dû faire face à un dilemme : ne pas surexposer les patients aux risques d'infection tout en maintenant leur prise en charge carcinologique. **Patients et Méthodes :** Nous avons analysé les données de prise en charge de 9 hôpitaux. L'objectif principal était d'évaluer la prévalence des adaptations de prise en charge des patients âgés durant la pandémie. L'objectif secondaire était d'évaluer l'incidence des hospitalisations liées à l'infection de la COVID 19. Les données collectées provenaient de la prise en charge de patients âgés de plus de 65 ans. **Résultats :** Nous avons analysé les données de 332 patients ambulatoires entre le 9 mars et le 30 avril 2020. L'âge médian était de 75 ans (intervalle, 65-101) et 53% étaient des hommes. Compte-tenu de la pandémie, plus de la moitié des patients ont eu une adaptation thérapeutique, définie par une intervention chirurgicale décalée ou annulée, un schéma d'irradiation adapté, adaptation du traitement systémique ou l'utilisation de la télé-médecine. Parmi les patients présentant une maladie localisée et ceux présentant une maladie métastatique, 60% et 53% respectivement ont eu une adaptation thérapeutique liée à la pandémie. L'utilisation des GCSF a été rapportée chez 83% des patients en nette augmentation compte-tenu de la pandémie. 69% des cliniciens ont utilisé la télé-médecine. Lors de l'analyse finale, seul un patient a été hospitalisé pour cause d'une infection de la COVID19, aucun décès n'a été rapporté. **Conclusion :** Notre étude fut la 1^{ère} à rapporter l'adaptation thérapeutique durant cette pandémie chez les sujets âgés. Durant cette crise sanitaire, notre objectif est de protéger nos patients et notamment les plus vulnérables, face à l'infection avec les gestes barrières et le confinement tout en garantissant la continuité des soins du cancer. Nous avons constaté la capacité d'adaptation des cliniciens avec un faible taux d'incidence d'infection grave chez ces patients âgés ambulatoires. **Mots clés :** Pandémie de la COVID19, patients âgés cancéreux, parcours de soins

Introduction

In France, between the beginning of March and November 10th 2020, 193,100 individuals were infected by COVID19 and 28,940 died, 73% of whom were over 75 years old¹.

Preliminary reports have shown that older individuals, patients with comorbidities and cancer patients represent an at-risk population, including the risk of developing of a severe and deadly form of the infection²⁻⁴.

Thus, the management of older cancer patients was highly challenging for clinicians in a health-care system operating at maximum capacity. Indeed, immunosuppression due to both advanced age and cancer makes this population more susceptible to COVID infection, with potentially life-threatening prognoses.

Practitioners were therefore faced with the dilemma of protecting patients from the risk of infection without compromising their oncological care.

In this study, we analyse elderly cancer patient care during this pandemic and report on patients' and physicians' point of view with regard to patient care.

Patients and Methods

Study design

PRATICOVID is a multicenter observational study involving clinicians from 9 sites in France. The study was declared to the National Institute for Health (*Institut National des Données de Santé, INDS, Data MR3416230420*) and was reported to the National Commission for Data Protection and Liberties. Data were analyzed and interpreted by the authors. All authors reviewed the manuscript.

Study design

Nine French hospitals took part in this study from March 9 to April 30: 3 military hospitals, 4 university hospitals and 2 private clinics. All of these are general hospitals, and have been actively involved in caring for patients infected with COVID19, with an increased number of beds in intensive care, infectious disease, internal medicine and pulmonology.

These hospitals established dedicated care pathways for the management of patients infected with COVID19.

This study was initiated 1 week before the health crisis and subsequent containment measures were declared at the national level.

Few recommendations for the management of patients were issued during this pandemic. We evaluated the therapeutic management of cancer patients in these establishments in the following manner.

In the context of the pandemic, the therapeutic decision was debated in a multidisciplinary discussion meeting from which a therapeutic proposal was made. The proposal was then discussed with the patient and the management strategy was established (Figure 1).

Each investigator completed a questionnaire for each outpatient seen in consultation or teleconsultation (i.e. by telephone or videoconferencing).

We analyzed data from 332 outpatients' case files, demographic data (year of birth, sex, comorbidities, body mass index), disease characteristics (primitive, histology, stage, date of diagnosis), standard treatment and treatment decision during the pandemic, type of

usual follow-up, type of follow-up in the COVID context, type of treatment received, treatment regimen received, inclusion in a clinical trial or not.

All patients were older than 65 years of age. This cut-off was chosen because the High Council for Public Health (Haut Conseil de la Santé Publique), on March 15, 2020, proposed a cut-off at 60 years of age for the prioritization of intensive care management for patients with cancer and COVID19.

Study endpoints

The primary endpoint was to assess the prevalence of modified patient care during the pandemic. Modified patient care was defined as a postponed or canceled surgery, a postponed, canceled or modified irradiation protocol, a canceled or adapted systemic treatment or the use of telemedicine.

Adapted systemic treatment was defined as oral regimen substituted for intravenous regimen, monotherapy substituted for polychemotherapy, dose reduction, dose delay, interruption of the systemic treatment, more frequent use of GCSF.

The secondary endpoint was to evaluate the incidence of hospitalization and mortality due to COVID19.

STATISTICAL ANALYSIS

Body mass index was calculated as weight divided by height squared (kg/m²). We estimated the distribution of different variables in the study population and calculated median and range for continuous variables.

All statistical analyses were carried out with Statview software (SAS Institute, Cary, NC).

Results

Patients

A total of 332 cancer patients were case-managed at 9 sites, by oncologists, surgeons and radiotherapists from March 9 to April 30.

Among the main characteristics (Table 1), the median age was 75 years (range, 65 – 101) and 53% were male. In our cohort, 164 patients (49%) were older than 75 years. More than 255 patients presented at least one comorbidity. The main primitive tumour was prostate cancer. 60% of the patients presented a metastatic disease. Another 123 patients (37%) presented a new cancer diagnosis.

Twenty-nine patients (9%) were included in a clinical trial.

Localized cancer disease

One hundred thirty-four patients had localized disease. Changes in clinical management were made for 60%, of which 71% via telemedicine.

Likewise, clinical management was modified for 71% of patients undergoing surgical treatment, among whom 67% had surgery deferred or cancelled, or did not receive neoadjuvant chemotherapy.

Among patients undergoing radiotherapy, treatments were modified for 37%, of whom 90% had delayed radiotherapy or underwent a hypofractionated regimen.

Clinical management was modified for 60% of patients undergoing adjuvant systemic treatment, of which 20% did not receive adjuvant treatment or had a change of protocol.

Metastatic cancer disease (Figure 2)

The number of patients presenting metastatic disease was 198. Clinical management was modified for 106 patients, of whom 69% through teleconsultations.

Chemotherapy population

A total of 109 patients (55%) were on a chemotherapy-based protocol (mono, two- or three-drug therapy in combination with immunotherapy or targeted therapy). Clinical management was modified for 54% of this population, of which 61% had a modified protocol, 31% went from IV chemotherapy to oral chemotherapy, 33% had a modification in their chemotherapy dose regimen (de-escalation of the intensity of chemotherapy passing from a three- or two-drug regimen to monotherapy, adjustment of the doses) and 39% had a reduced-frequency schedule or interruption of treatment. GCSF was administered to 83% of patients.

Targeted therapy population

A total of 36 were treated with targeted therapy. Clinical management was modified for 53% of this population, of whom 89% by teleconsultation while 26% had an interruption of treatment or a reduction in doses.

Hormone therapy population

Hormone therapy was used with 22 patients. Clinical management was modified for 55% of this population with a follow-up by telemedicine or the choice of hormone therapy without corticosteroids.

Immunotherapy population

Another 13 patients were undergoing immunotherapy. Clinical management was modified for 31%, essentially involving suspension of treatment and the use of teleconsultation.

Other populations

A further 11 patients (5%) were undergoing surgical therapy, radiotherapy, intensification, or other forms of treatment. Clinical management was modified with changes in therapy for 45% of this population.

Follow-up population

Finally, seven other patients were in need of monitoring. All of these patients had teleconsultations.

Modified patient care during the pandemic is reported in Table 2.

Incidence of COVID19 and Mortality

At the end of analysis, only one patient was hospitalized because of COVID19 infection. None died from COVID19 infection.

Discussion

Initial reports clearly raised the alarm signal about the development of severe and fatal forms of COVID in the older population suffering from cancer².

Thus, our first mission was to reduce the risk of exposure of this population to COVID19. In France, lockdown measures were declared on the 16th of March, prohibiting access to retirement homes as well.

With high demands placed on healthcare services to take care of patients with COVID19, limiting access to hospitals was imperative, all the more so for patients over 65 years of age.

These measures came as a complement to preventive “barrier” measures such as face masks and hand-washing, in order to counter the risks that could endanger this population.

But it was also important to maintain care for these patients, without compromising the chances of success for their cancer treatment⁵. Especially since access to intensive care unit services was limited for these older patients, with a cut-off at 60 years of age⁶. The establishments that contributed to this study are based in Ile de France and Guadeloupe, two of the French regions most severely affected by the pandemic.

This unprecedented pandemic caused disruptions in the management of older cancer patients, making it even more complex than it already was.

This prospective study is the first to report on how management strategies for older cancer patients were modified regardless of the stage of their disease, during the first peak of the pandemic in France.

More than half of the patients had some form of treatment modification. Among patients with localized cancer, 60% had a change in management strategy due to the pandemic. Surgical procedures were most often postponed, to avoid overcrowding intensive care units and increasing the risk of infection for these patients. The use of a hypofractionated regimen for patients eligible for radiotherapy was implemented essentially in order to reduce the number of patient visits⁷. In general, adjuvant systemic treatment was maintained, with only 5 patients not receiving any. However, treatment regimens were adjusted to avoid increasing immunosuppression in patients. Changes in management strategy were made for 53% of patients at the metastatic stage. Oral administration was the preferred choice, as well as de-escalation of multiagent chemotherapy protocols. The use of GCSF was remarkable, at 83% of patients, and increased considerably in the context of the pandemic. Spacing between treatments was implemented, including immunotherapy.

This study shows the essential place of telemedicine, which allowed us to maintain contact and ensure follow-up with our patients, in particular with regard to treatment toxicities, essentially for oral therapies and patients requiring medical supervision. Because of this pandemic it has been demonstrated that, generally speaking, the management of older cancer patients can be carried out through telemedicine. This finding is all the more important as it has now become a part of daily practice for clinicians, while in France the legalization of this practice, including the reimbursement of teleconsultation procedures, is recent, dating to September 15, 2018.

At the end of this analysis, the incidence of hospitalization because of COVID19 infection was low. It is reasonable to suppose that our management strategies helped to protect our patients.

However, our study highlights certain points which will probably have an impact on patients' prognoses:

Delay in diagnosis: Only 40% of new cancers were diagnosed in this population during this period, raising fears about the stage of the disease when patients eventually consult again and the possibility of obtaining access to treatment

Access to innovative therapies. In our study, less than 1% of patients were included in a clinical trial. Most clinical trials were suspended during this period and are only resuming very gradually. The older cancer population already suffered from lack of access to these trials^{8,9}.

For selected patients, delaying surgery does not impact prognosis in cases such as stage I or II breast cancer or low intermediary risk prostate cancer^{10,11}. In other cases, however, this delay could impact the prognosis and the recurrence risk. Future studies are needed to address this question.

Undoubtedly, telemedicine appears to be the way of the future and has already proven its worth, but its implementation will probably be gradual as the older population at present is averse to such new technologies. Moreover, physical contact is an essential supportive measure for these patients whose quality of life is our primary objective.

A longer follow-up period will allow us to evaluate the outcome of cancer diagnoses for these patients.

Conclusion

This pandemic has disrupted the way we organize healthcare and the management of cancer patients. Our objective is to protect our patients from infection via protective barrier measures and social distancing, but also to guarantee the continuity of cancer care without overexposing this fragile population. The risk linked to a possible COVID-19 infection has led to the implementation of therapeutic alternatives. In certain situations, it has been possible to offer an equivalent therapeutic option, but most often the result has been a reduction in the intensity of cancer treatments, in other words a potentially lower chance of successful cancer treatment. New management methods have been implemented to avoid the complete isolation of our patients, such as telemedicine. The impact of these strategies on the incidence of COVID 19 infections and on cancer prognosis will be reported in future studies.

At present, we are also developing care paths, with generalized screening, that will reassure our patients who currently are afraid of returning to the hospital.

Acknowledgments

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Conflict of interest

The authors declare that they have no conflict of interest.

Author Contributions

All authors were involved in the conception and design

of the study and contributed to data analysis and interpretation. All authors reviewed the draft critically, approved the final version to be submitted, and take accountability for all aspects of the published work.

Data Availability Statement

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

Sponsor's Role

Not applicable

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Figure legends

Figure 1. Study Design

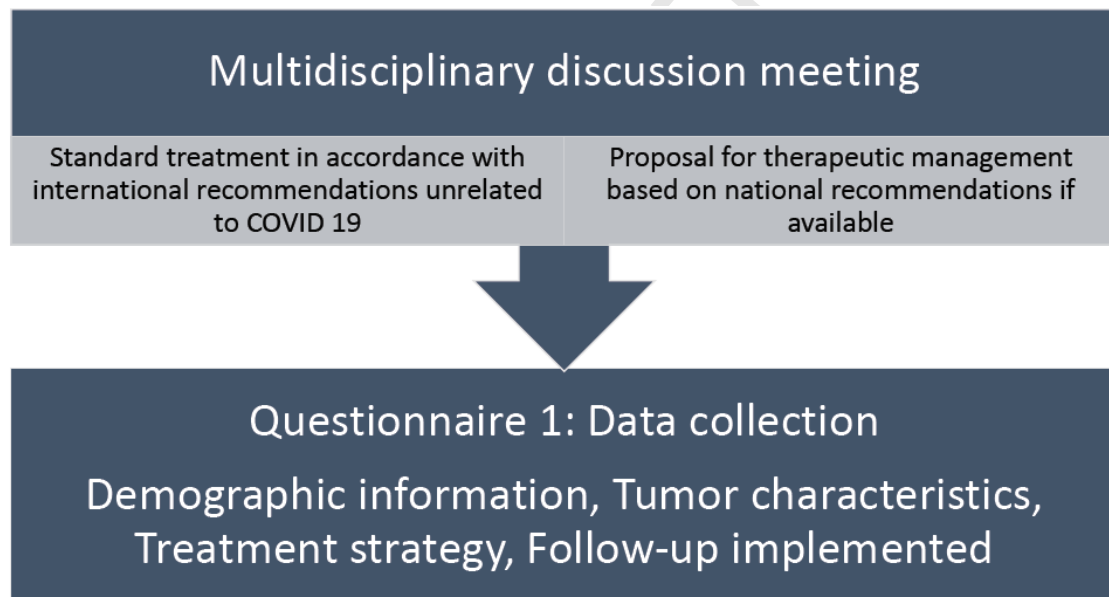
Figure 2. Management of metastatic population

Variables	All patients
Number of patients (%)	332 (100.0)
Age (years) median (range)	75 (65 – 101)
Gender <i>n</i>=(, (%)	
Female	156 (47.0)
Male	176 (53.0)
Body mass index (kg/m²) <i>n</i>=(, (%)	
< 25	156 (56.5)
[25 - 30]	101 (36.6)
> 30	19 (6.9)
New diagnosis <i>n</i>=(, (%)	
No	209 (63.0)
Yes	123 (37.0)
Location of cancer <i>n</i>=(, (%)	
Head and Neck	10 (3.0)
Brain	1 (0.3)
Lung	36 (10.8)
Colorectal	44 (13.3)
Prostate	88 (26.5)
Breast	65 (19.6)
Kidney	12 (3.6)
Urothelial	31 (9.3)
Gynaecology	21 (6.3)
Haematology	10 (3.0)
Others	14 (4.2)
Comorbidities <i>n</i>=(, (%)	
Cardiovascular	194 (55.9)
Renal disease	14 (4.0)
Others	139 (40.1)
Types of treatment <i>n</i>=(, (%)	
Surgery	12 (4.3)
Radiotherapy	53 (19.1)
Systemic treatment	175 (62.9)
Multimodal treatment	38 (13.7)
Centres <i>n</i>=(, (%)	
Public practice	86 (25.9)
Private practice	75 (22.6)
Military hospital	171 (51.5)

Table 1. Baseline characteristics

Clinical Management	Adapted patient protocol n (%)	Telemedicine
Localized disease (n=134)	67 (50%)	58 (43%)
Surgery (n=45)	32 (71%)	18 (40%)
Radiotherapy (n=27)	10 (37%)	5 (19%)
Adjuvant systemic treatment (n=42)	25 (60%)	22 (52%)
Follow-up (n=20)	0, (0%)	13 (65%)
Metastatic Disease (n=198)	144 (72%)	73 (37%)

Table 2. Modified patient care during the pandemic.



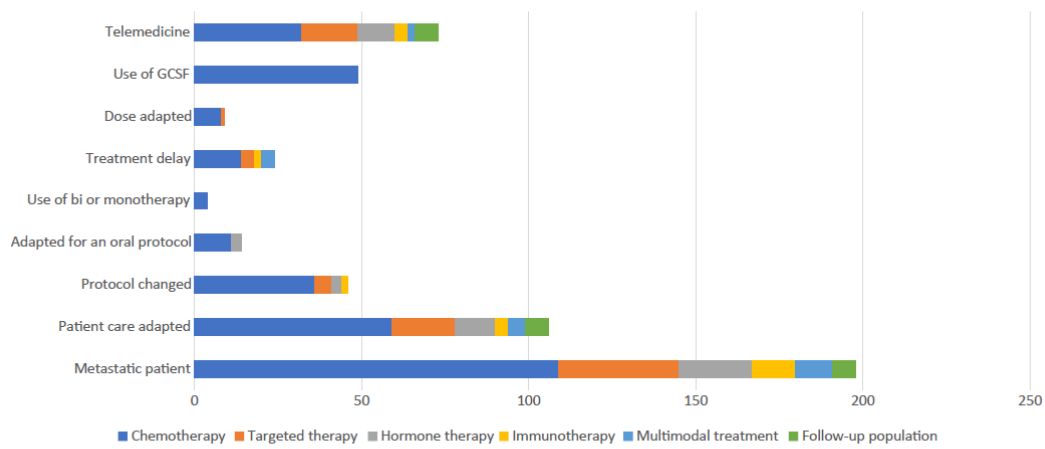


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