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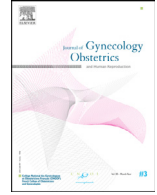
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Original Article

The psychological impact of therapeutic changes during the COVID-19-lockdown for gynaecological and breast cancer patients'☆☆



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ABSTRACT

Objective: The exceptional health situation related to the Coronavirus 2019 (COVID-19) pandemic has required an in-depth and immediate reorganisation of gynaecological cancer care. The main objective was to assess the psychological impact of such treatment modifications during the lockdown period for gynaecological and breast cancer patients.

Patients and methods: A multicentre prospective study was conducted in three university gynaecological cancer wards (Hospices Civils de Lyon, France) during the French first lockdown (16th March to 11th May 2020). All patients with non-metastatic breast cancer or gynaecological cancer were included. Data was collected regarding treatment modifications (delay, cancellation, change of therapeutic plan). The psychological impact of treatment modifications during and after the lockdown was assessed by validated questionnaires (SF-12, EORTC-QLQ-C30, HADS).

Results: A total of 205 consecutive patients were included, aged 60.5 ± 1.0 years. Seven patients (3.4%) presented a SARS-CoV-2 infection, and two patients died. Treatment was maintained for 122 (59.5%) patients, postponed for 72 (35.1%) and cancelled for 11 (5.4%). During the lockdown, 35/118 (29.7%) patients suffered from confirmed anxiety and the mean fatigue-EORTC score was 48.00 ± 2.51 ; it was 38.64 ± 2.33 ($p = 0.02$) after the lockdown. After the lockdown and compared to the lockdown period, the mental SF-12 score and overall health status EORTC score were significantly higher (45.03 ± 1.06 vs 41.71 ± 1.15 , $p = 0.02$ and 64.58 ± 1.66 vs 57.44 ± 2.02 , $p = 0.0007$, respectively). The number of confirmed-anxiety cases was significantly higher amongst patients for whom treatment was delayed or cancelled (40.5% vs 23.7%, $p = 0.04$).

Conclusion: This study quantified the treatment modifications of gynaecological cancer patients during the COVID-19 lockdown and revealed a poorer psychological state and quality of life during this period, even for patients whose treatment plan was not actually modified. Anxiety was more significant in patients with a delayed or cancelled treatment.

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Introduction

The Coronavirus disease 2019 (COVID-19) pandemic has caused an exceptional health crisis in most countries during the first semester of 2020. The World Health Organisation (WHO) described this pandemic on the 16th March 2020 as a “public health emergency of international concern” [1]. SARS-CoV-2 infection causes benign symptoms in most

cases but can have more serious consequences on vulnerable people. Cancer patients have a 5-time higher risk of developing a severe form of SARS-CoV-2 infection compared to the general population, as well as a 8-time higher risk of COVID-19-related death [2,3], and a 3-time higher risk of being infected with SARS-CoV-2 [2–4].

In France, a first lockdown of the population was established from March 16th to May 11th 2020 in order to face the pandemic and restrict human contacts and travels [5]. A state of health emergency was also declared on March 24th and all non-urgent medical and surgical activities were suspended: the three objectives were to preserve health resources, to avoid exposing vulnerable patients and patients

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with comorbidities to a SARS-CoV-2 infection, and to ensure appropriate care for cancer patients [5,6].

Consequently, the exceptional context added to the saturation of intensive care units led to a prompt large-scale reorganisation and adaptation of care, affecting gynaecologic and breast cancer patients [7]. Learned societies issued guidelines in order to help physicians in their decisions, keeping in mind the ultimate objective of limiting the loss of chance for cancer patients [8–10]. Our primary objective was to conduct a study to quantify the proportion of gynaecological and breast cancer patients whose treatment was delayed or cancelled [10]. In a previous study led in our group, treatment was maintained for 122 (59.5%) patients, postponed for 72 (35.1%), and cancelled for 11 (5.4%) [11]. At the same time, the mental health of the general population was significantly impacted by the pandemic situation, and higher levels of anxiety and depressive or psychotic symptoms were observed in numerous countries during the lockdowns [12–14]. Cancer patients present high risks in terms of poor mental health during the pandemic [13–18], but only few studies have analysed the effect of treatment postponement or cancellation for women with gynaecologic cancer [11,19].

Our secondary objective was to assess the impact of the lockdown on the psychological state and quality of life of gynaecologic cancer patients, related to modifications in their treatment schedule.

Patients and methods

The present study was prospective, multicentric, and led in three public gynaecologic oncology wards (*Hôpital Femme Mère Enfant, Centre Hospitalier Lyon Sud, and Hôpital de la Croix Rousse* from the *Hospices Civils de Lyon, France*). It was approved by the local ethics committee (*Comité de Protection des Personnes Sud Méditerranée III, 2020.04.12 bis-20.04.10.57939*). All patients received an information note and none refused to participate in the study. The study was registered on ClinicalTrials (NCT04351139).

The inclusion criteria were: being ≥ 18 , having a gynaecologic cancer (non-metastatic breast, uterine, ovarian, cervical, vaginal, or vulvar cancer) whose therapeutic management was planned during the first French lockdown period, and not being opposed to participating in the study. Inclusions took place during the first French lockdown period, i.e. from March 16th to May 11th 2020. All the patients who underwent a surgical procedure had to fill a questionnaire investigating the presence of potential COVID-19 symptoms on the day prior to the surgery. The exclusion criteria were: not being able to understand the information provided, being deprived of liberty, being under guardianship. The control group was composed of patients for whom treatment was not postponed during the first lockdown, i.e. for whom the lockdown had no direct impact on the management of their therapeutic care. Postponement was defined as a modification of the expected delay of care, and this information was systematically registered in the medical file during the first lockdown. Therefore, this definition refers to the occurrence of a modification of treatment. Tumours were classified according to their WHO histologic type [20]. Data regarding treatment approaches were collected (surgery, radiotherapy, chemotherapy, hormone therapy), both intended and actually administered, as well as the date of treatment initiation as initially planned, the actual date of treatment initiation, the delay between them, and the reason for delaying treatment initiation.

The questionnaires were sent by electronic mail during the lockdown period in March 2020, and after the lockdown in June 2020, regardless of the scheduled/actual date of treatment of each patient. Patients had until June 30th 2020 to return the first questionnaire and until September 30th 2020 to return the second questionnaire.

The primary outcome was the comparison of quality of life scores and psychological results between patients whose treatment was delayed/ cancelled and patients whose treatment proceeded as initially planned. The psychological state of patients was assessed using

validated questionnaires: the SF-12 (short form-12) questionnaire assessed the general quality of life (general physical and mental health), the EORTC (European organisation for research and treatment of cancer)-QLQ-C30 questionnaire assessed the cancer-related quality of life, the HADS (hospital anxiety and depression scale) assessed anxiety and depression levels [21–23]. The EORTC-QLQ C30 questionnaire was composed of 30 items and 3 scales (functional, symptomatic, and overall quality of life) wherein each item was scored from 0 to 100. The HADS was composed of 7 anxiety-related items and 7 depression-related items, scoring for each item ranged from 0 to 3; a sub-score ≤ 7 corresponded to an absence of anxiety/depression, a score ≥ 8 and ≤ 10 corresponded to a probable anxiety/depression, and a score ≥ 11 (maximum = 21) corresponded to confirmed anxiety/depression.

Statistical analyses

Statistical analyses were performed using the statistical software SAS (SAS Studio 3.6; SAS Institute Inc.). Continuous quantitative variables were expressed as mean \pm standard deviation (SD) and compared using the Student *t*-test. Qualitative variables were expressed as count (percentage) and compared using a χ^2 test or Fisher's exact test in case the sample size was < 5 . Comparisons between lockdown and post-lockdown data were performed using the Student *t*-test for paired series for quantitative variables and the McNemar test for qualitative variables. A *p*-value < 0.05 was considered statistically significant.

Results

A total of 205 patients were included, their mean age was 60.5 ± 1.0 years. Seven (3.4%) were diagnosed with COVID-19 (one diagnosis was confirmed by SARS-CoV-2-specific RT-PCR, two were confirmed by SARS-CoV-2-specific RT-PCR and chest scan, four were solely based on symptoms).

Among the COVID-19-positive patients, two required hospitalisation in a COVID-19 unit and none required admission in intensive care unit. During the study period, two patients died: a breast cancer patient from severe respiratory distress and a uterine cancer patient from hypoxic cardiac arrest. In both cases, a COVID-19 diagnosis was suspected but not confirmed.

Among the 205 patients included, 132 (64.4%) had breast cancer, 31 (15.1%) uterine cancer, 24 (11.7%) ovarian cancer of which 14 (58.3%) were stage III, 13 (6.3%) cervical cancer, and 5 (2.4%) vulvar cancer (Table 1). Treatment initiation was unchanged for 122 (59.5%) patients, delayed for 72 (35.1%), and cancelled for 11 (5.4%). The mean delay between the initially-planned and actual dates of treatment initiation was 37 ± 3 days.

The mean delay between the initially-planned and actual dates of surgical interventions was 42 ± 4 days. The reasons for delaying surgery were related to organisation for 27 (67.5%) procedures, patient request for 6 (15.0%), and health issues for 7 (17.5%): one cardiac issue, one breast haematoma, two patients of advanced age, one delay in node biopsy results, one patient continuing chemotherapy, and one COVID-19 positive patient.

Among 7 cancellations, 4 were related to the frailty of patients who had important co-morbidities (and 2 of them were COVID-19 positive), 2 were related to the progression of cancer that rendered the concerned patients non-eligible for surgery, and 1 was due to the death of the patient that occurred before the planned date of surgery (this patient had a suspected but not confirmed COVID-19 diagnosis).

The mean delay between the initially-planned and actual dates of radiotherapy treatment initiation was 36 ± 5 days. The reasons for delaying radiotherapy were related to organisation for 16 (69.6%) cases, patient request for 2 (8.7%), and health issues for 5 (21.7%).

Table 1
Gynaecological cancer characteristics (n = 205).

Histological type	Total
Breast (n = 132)	
No special type	108 (81.8%)
Lobular	17 (12.9%)
Other	7 (5.3%)
TNM/ FIGO stage Tis	10 (7.6%)
T1	54 (41.2%)
T2	50 (38.2%)
T3	13 (9.9%)
T4	4 (3.1%)
N0	73 (59.8%)
N1	33 (27.1%)
N2	16 (13.1%)
Uterine (n = 31)	
Type 1 ADK*	13 (41.9%)
Type 2 ADK*	13 (41.9%)
Other	5 (16.1%)
TNM/ FIGO stage I	17 (54.8%)
II	2 (6.4%)
III	6 (19.3%)
IV	6 (19.3%)
Ovarian (n = 24)	
High-grade serous ADK*	14 (58.3%)
Low-grade serous ADK*	1 (4.2%)
Other	9 (37.5%)
TNM/ FIGO stage I	5 (20.8%)
II	1 (4.2%)
III	14 (58.3%)
including IIIC	11 (45.9%)
IV	4 (16.7%)
Cervical (n = 13)	
Adenocarcinoma	6 (46.2%)
Squamous cell carcinoma	6 (46.2%)
In situ	1 (7.7%)
TNM/ FIGO stage I	6 (46.1%)
II	4 (30.8%)
III	1 (7.7%)
IV	1 (7.7%)
Cis	1 (7.7%)
Vulvar (n = 5)	
Squamous cell carcinoma	4 (80.0%)
Other	1 (20.0%)
TNM/ FIGO stage I	3 (60.0%)
II	1 (20.0%)
III	1 (20.0%)
IV	0

*ADK: adenocarcinoma.

Data expressed as count (percentage).

Classifications used: breast, TNM 8th edition from the American Joint Committee on Cancer, 2017; uterine, FIGO 2009; ovarian, FIGO 2013; cervical, FIGO 2009; vulval, FIGO 2009.

A total of 56 chemotherapy treatments were initially planned, of which 8 (14.3%) were delayed (Table 2). The mean delay between the initially-planned and actual dates of chemotherapy treatment initiation was 21 ± 3 days. The reasons for delaying chemotherapy were related to organisation for 3 (37.5%) cases, patient request for 1 (12.5%), and health issues for 4 (50.0%).

Table 2
Treatment modifications during the first lockdown (n = 205 patients and 242 treatments).

	Surgery	Chemotherapy	Radiotherapy	Hormone therapy	Total
Initiated/performed as planned	68 (59.1)	46 (82.1)	33 (55.9)	10 (83.3)	157
Delayed	40 (34.8)	8 (14.3)	24 (40.7)	2 (16.7)	74
Cancelled	7 (6.1)	2 (3.6)	2 (3.4)	0 (0.0)	11
Total	115	56	59	12	242

Data expressed as count (percentage).

Table 3
Characteristics of patients who filled or did not fill the questionnaire.

	Answer n = 125	No answer n = 80	p
Age in years	58.61 +/- 1.25	63.65 +/- 1.80	0.02
Cancer localisation			
Cervix	7 (5.60%)	6 (7.50%)	
Ovary	9 (7.20%)	15 (18.75%)	
Breast	89 (71.20%)	43 (53.75%)	
Endometrium	18 (14.40%)	13 (16.25%)	
Vulva	2 (1.60%)	3 (3.75%)	0.05
Treatment			
Initiated/performed as planned	80 (64.00%)	42 (52.50%)	
Delayed	42 (33.60%)	30 (37.50%)	
Cancelled	3 (2.40%)	8 (10.00%)	0.04

Data expressed as count (percentage) or mean ± standard deviation.

Among the 205 patients included, 125 filled a questionnaire regarding their cancer and any treatment postponement during the lockdown period. The characteristics of the patients who fulfilled this questionnaire are detailed in Table 3. Compared to those who did not answer, they were significantly younger, with breast localisation, and without delay in their treatment.

During the lockdown period, the mean physical-SF-12 score was 38.98 ± 0.80 vs 40.11 ± 0.77 after the lockdown (p = 0.30) and the mean mental-SF-12 score was 41.71 ± 1.15 vs 45.03 ± 1.06, p = 0.02 for the 125 patients who answered the questionnaires..

The mean anxiety-HAD score was 7.95 ± 0.44 during the lockdown, vs 7.21 ± 0.37 after the lockdown (p = 0.07). During the lockdown period, out of 118 responses, 35 (29.7%) patients suffered from confirmed anxiety and 63 (53.4%) did not report any anxiety. Post-lockdown, the mean depression-HAD score was significantly lower compared to the lockdown period (post-lockdown: 5.59 ± 0.38, lockdown: 6.49 ± 0.44, p = 0.005).

Post-lockdown, the mean overall-health-status-EORTC score (post-lockdown: 64.58 ± 1.66, lockdown: 57.44 ± 2.02, p = 0.0007), as well as the mean physical-functioning-EORTC score (76.28 ± 1.91 vs 72.06 ± 2.19, p = 0.02), and the mean social-functioning-EORTC score (77.01 ± 2.54 vs 68.99 ± 3.03, p = 0.04) were higher compared to the lockdown period.

Conversely, the mean fatigue-EORTC score (post-lockdown: 38.64 ± 2.33, lockdown: 48.00 ± 2.51, p = 0.02), as well as the mean nausea-and-vomiting-EORTC score (4.25 ± 1.01 vs 11.20 ± 1.61, p = 0.0002), the mean appetite-loss-EORTC score (12.41 ± 2.10 vs 22.93 ± 2.74, p = 0.004), and the mean diarrhoea-EORTC score (5.15 ± 1.15 vs 9.76 ± 2.03, p = 0.04) were lower after the lockdown compared to the lockdown period (Table 4).

Patients with breast cancer were the most affected by a postponement of treatment (47 patients out of the 72 patients with postponement, i.e. 65.3%). Most often, it was ductal breast cancer (39/47 patients), stage T1 (20/47 patients), and stage NO (27/47 patients). For these patients, the comparison of scores during and after the lockdown showed no significant difference.

There was no significant difference regarding the psychological state between patients whose treatment was delayed/cancelled vs unchanged during the lockdown period, except for a higher number of patients suffering from confirmed anxiety among those for whom

Table 4
Comparison of psychological state characteristics during and after the first lockdown.

	Lockdown period n = 125	Post-lockdown period n = 138	p
Physical SF-12 score	38.98 ± 0.80	40.11 ± 0.77	0.30
Mental SF-12 score	41.71 ± 1.15	45.03 ± 1.06	0.02
Anxiety HAD score	7.95 ± 0.44	7.21 ± 0.37	0.07
Anxiety HAD*			
absent	63 (53.4%)	79 (60.3%)	
probable	20 (16.9%)	24 (18.3%)	
confirmed	35 (29.7%)	28 (21.4%)	0.11
Depression HAD score	6.49 ± 0.44	5.59 ± 0.38	0.005
Depression HAD**			
absent	75 (63.0%)	92 (70.2%)	
probable	20 (16.8%)	17 (13.0%)	
confirmed	24 (20.2%)	22 (16.8%)	0.14
EORTC score			
Overall health status	57.44 ± 2.02	64.58 ± 1.66	0.0007
Physical functioning	72.06 ± 2.19	76.28 ± 1.91	0.02
Role functioning	73.60 ± 2.70	81.03 ± 2.29	0.009
Emotional functioning	67.69 ± 2.50	72.44 ± 2.09	0.14
Cognitive functioning	76.93 ± 2.23	78.38 ± 1.94	0.84
Social functioning	68.99 ± 3.03	77.01 ± 2.54	0.04
Fatigue	48.00 ± 2.51	38.64 ± 2.33	0.02
Nausea and vomiting	11.20 ± 1.61	4.25 ± 1.01	0.0002
Pain	34.00 ± 2.63	29.47 ± 2.42	0.16
Dyspnoea	20.16 ± 2.50	17.04 ± 3.00	0.33
Insomnia	42.13 ± 3.03	36.50 ± 2.84	0.12
Appetite loss	22.93 ± 2.74	12.41 ± 2.10	0.004
Constipation	21.50 ± 2.89	17.28 ± 2.32	0.22
Diarrhoea	9.76 ± 2.03	5.15 ± 1.15	0.04
Financial difficulties	17.34 ± 2.53	13.97 ± 2.32	0.20

Data expressed as count (percentage) or mean ± standard deviation.
Abbreviations: SF-12 = short form-12; HAD = hospital anxiety and depression;
EORTC = European organisation for research and treatment of cancer.

treatment was delayed/cancelled (18/76 [23.7%] vs 17/42 [40.5%], p = 0.04; Table 5).

Discussion

The extraordinary health situation stemming from the COVID-19 pandemic required an in-depth reorganisation of the gynaecological oncology care pathway. It resulted in psychological repercussions such as social isolation, financial loss, and greater anxiety [14,18,24]. However, little data are available regarding the actual impact of such reorganisation on patients' psychological state, justifying the relevance and interest of our study. First, we reported a delay or cancellation of treatment for nearly 40% of gynaecological cancer patients. Second, our results showed poorer mental health-related quality of life and poorer cancer-related quality of life, higher levels of anxiety and depressive symptoms during the lockdown period compared to the post-lockdown period. Third, we found significantly higher levels of anxiety in patients for whom treatment was delayed or cancelled, but no difference in the quality of life or depressive symptoms, compared to those for whom treatment was maintained.

In France, the *Haut Conseil de Santé Publique* issued guidelines regarding the care of gynaecological cancer patients in the COVID-19 pandemic context, and several learned societies have issued recommendations aiming at reconciling these guidelines while taking into account the specific constraints related to each hospital [6,10].

In our cohort, treatment was maintained for 59.5% of patients, delayed for 35.1%, and cancelled for 5.4% [11]. Treatments, mostly surgery and radiotherapy, were postponed rather than cancelled. De Joode et al. have recently published similar results, as 30% of oncological treatments or follow-up were postponed [25].

Consistent with the results reported in previous studies [17,19], our prospective study showed significantly more patients suffering from anxiety if their treatment had been postponed/cancelled. Moreover, significant differences in quality of life parameters and

Table 5
Comparison of psychological state according to the presence/absence of treatment modifications.

	Lockdown period (n = 125)		p	Post-lockdown period (n = 138)		p
	No treatment modification n = 80	Delay or cancellation n = 45		No treatment modification n = 89	Delay or cancellation n = 49	
Physical SF-12 score	38.63 ± 1.03	39.60 ± 1.29	0.57	39.46 ± 0.99	41.28 ± 1.24	0.26
Mental SF-12 score	42.71 ± 1.42	39.93 ± 1.95	0.25	45.88 ± 1.30	43.50 ± 1.83	0.28
Anxiety HAD score	7.37 ± 0.50	9.00 ± 0.81	0.07	7.08 ± 0.45	7.44 ± 0.66	0.65
Anxiety HAD*						
absent	41 (53.9%)	22 (52.4%)		52 (62.6%)	27 (56.2%)	
probable	17 (22.4%)	3 (7.1%)		16 (19.3%)	8 (16.7%)	
confirmed	18 (23.7%)	17 (40.5%)	0.04	15 (18.1%)	13 (27.1%)	0.48
Depression HAD score	6.25 ± 0.53	6.91 ± 0.78	0.48	5.31 ± 0.46	6.08 ± 0.68	0.33
Depression HAD**						
absent	49 (64.5%)	26 (60.5%)		63 (75.0%)	29 (61.7%)	
probable	15 (19.7%)	5 (11.6%)		9 (10.7%)	8 (17.0%)	
confirmed	12 (15.8%)	12 (27.9%)	0.21	12 (14.3%)	10 (21.3%)	0.28
EORTC score						
Overall health status	57.90 ± 2.39	56.63 ± 3.72	0.76	65.51 ± 2.14	62.92 ± 2.62	0.45
Physical functioning	71.83 ± 2.81	72.46 ± 3.50	0.89	76.62 ± 2.22	75.65 ± 3.58	0.81
Role functioning	72.50 ± 3.43	75.55 ± 4.39	0.59	82.20 ± 2.65	78.91 ± 4.34	0.49
Emotional functioning	69.72 ± 3.02	64.07 ± 4.40	0.28	73.22 ± 2.44	71.03 ± 3.90	0.62
Cognitive functioning	78.96 ± 2.58	73.33 ± 4.15	0.23	79.77 ± 2.22	75.85 ± 3.70	0.33
Social functioning	67.32 ± 3.83	71.85 ± 4.99	0.47	76.89 ± 3.11	77.21 ± 4.45	0.95
Fatigue	49.58 ± 3.17	45.18 ± 4.09	0.40	38.01 ± 2.82	39.79 ± 4.16	0.72
Nausea and vomiting	10.62 ± 1.86	12.22 ± 3.06	0.64	3.60 ± 0.95	5.44 ± 2.25	0.38
Pain	32.92 ± 3.29	35.92 ± 4.43	0.58	28.46 ± 2.91	31.29 ± 4.34	0.58
Dyspnoea	21.10 ± 3.13	18.52 ± 4.18	0.62	17.05 ± 2.51	17.01 ± 3.78	0.99
Insomnia	41.67 ± 3.68	42.96 ± 5.36	0.84	38.63 ± 3.57	32.65 ± 4.71	0.31
Appetite loss	22.92 ± 3.38	22.96 ± 4.72	0.99	10.98 ± 2.51	14.96 ± 3.77	0.36
Constipation	19.58 ± 3.18	25.00 ± 5.75	0.37	16.09 ± 2.55	19.44 ± 4.64	0.49
Diarrhoea	8.86 ± 2.38	11.36 ± 3.74	0.56	4.98 ± 1.39	5.44 ± 2.03	0.85
Financial difficulties	18.80 ± 3.31	14.81 ± 3.90	0.45	14.94 ± 3.02	12.24 ± 3.60	0.58

Data expressed as n (%) or mean (±standard deviation).

psychological state observed during the lockdown were reduced after the lockdown period.

From a survey led in May 2020, Gultekin et al. reported that about 2 in 10 cancer patients were more concerned about COVID-19 than their own cancer condition, especially for patients over 70 years [19]. Additionally, about 7 in 10 patients were preoccupied by the progression of their cancer in case of treatment delay/cancellation and a similar proportion declared not having received any information [19]. Considering this study and ours, it seems that many patients were anxious about receiving treatment during the lockdown, regardless of what may have been done to maintain the schedule. Treatment modifications during the pandemic period and concerns about not being followed-up by their usual physician were predictive factors for patient anxiety in a multivariate analysis [19]. Swainston et al. focused on women with breast cancer in the UK, reporting a significant association between cancer care disruption and higher levels of anxiety and depression [17]. Interestingly, we found no significant association between depression and care postponement, unlike with anxiety. This result may be partly explained by the variation across countries in depression rates observed during the COVID-19 pandemic and mainly related to the promptness of governmental responses, which occurred earlier in France compared to the UK [12].

A US survey conducted on ovarian cancer patients found anxiety associated with delays in cancer care in a multivariate analysis, but the biggest concern was a potential COVID-19 infection [26].

Wang et al. investigated 6213 cancer patients, about a quarter suffered from depression, 2 in 10 from anxiety, and 1 in 10 from post-traumatic stress [27]. Excessive alcohol consumption, worry about cancer management, fatigue, and pain were factors associated with mental health disorders, though only 1.6% patients did seek psychological help during the pandemic period [27]. Evaluating psychological distress, promoting home physical conditioning, and favouring online connections with relatives appeared to be essential to better the psychological well-being of cancer patients during this extraordinary period.

Romito et al. reported that amongst 77 chemotherapy-treated lympho-proliferative-cancer patients, about a third suffered from anxiety, depression, and/or post-traumatic stress [28]. Women and younger patients were the most affected by anxiety and post-traumatic stress [28]. Lou et al. found that patients undergoing anticancer treatments were more afraid of being infected with SARS-CoV-2 and had significantly more elevated stress levels due to the pandemic context compared to recovered cancer patients and healthy controls [29].

We found that the mental health was poorer during the lockdown than in the aftermath. In a recent meta-analysis, Prati & Mancini et al. reported that COVID-19 lockdowns had a small impact on mental health and found no moderating effect by age or gender [13]. This would therefore suggest that women with gynaecological cancer may represent a high-risk population for impaired mental health during the COVID-19 pandemic. Consistently, Haesebaert et al. recently reported that disability was a risk factor for poorer well-being during the lockdown in France [30]. The COVID-19 pandemic has been shown to have had a negative impact on the psychological well-being of cancer patients, as it induced severe anxiety, fear of infection, and a notable decrease in familial support [27]. Moreover, the social distancing that was imposed during the pandemic has been shown to be a factor promoting psychological distress, anxiety, insomnia, and fear of cancer recurrence [31]. Dedicated prevention strategies are thus needed to better detect and treat mental health impairments in this population, by optimizing physician-to-patient communication and offering psychoeducational tools to cope with the pandemic context [32]. Healthcare workers should also be adequately trained to manage the well-being and mental health of cancer patients.

Strengths and limits

This study is the first to investigate both the therapeutic and psychological impacts of the reorganised management of gynaecological cancer patient care during the COVID-19 pandemic. We were able to analyse the impact of treatment changes on quality of life and psychological metrics.

In terms of limits, the present study did not allow to accurately evaluate the loss of chance for patients whose care plan was modified, but only to report and quantify those modifications. Importantly, cancer screening and numerous other aspects of medical care were delayed/cancelled during the lockdown period, leaving no doubt that some cancer cases have not been diagnosed or have been diagnosed later than they would have normally been. This represents a critical indirect impact of the COVID-19 pandemic that has not been quantified herein. Moreover, a selection bias may have occurred, as the proportion of patients for whom treatment was maintained was higher amongst respondents compared to the patients who did not fulfil the questionnaires. This may impede the generalizability of our results.

Conclusion

This study showed that during the first COVID-19 lockdown, treatment was maintained for 60% of gynaecological cancer patients, delayed for 35%, and cancelled for 5%. Quality of life and psychological state were impaired during the lockdown for patients with an ongoing oncological treatment, and not after the lockdown. Gynaecological cancer patients did express a certain anxiety regarding modifications of their treatment plan. Healthcare providers should be aware of the impact of such modifications (even though crisis-driven) and develop initiatives to better communicate with patients. This study will hopefully provide insights for a better management of potential new COVID-19 pandemic episodes or any other future health crisis.

Contribution to Authorship: Each Author's Contribution to the Manuscript

Gery Lamblin: Conceptualization, Methodology, Supervision, Writing original draft, Writing-review and editing

G. Chene: Data curation

E. Leaune: Data curation, validation, investigation, writing original draft

C.A.Philip: data curation, investigation

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E. Nohuz: data curation

F.Golfier: data curation, investigation

M. Cortet: data curation, investigation, methodology, Validation

Clinical Trials

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Declaration of Competing Interest

None.

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