

Impact of the COVID-19 pandemic on patients with cancer

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Introduction COVID-19, an infectious disease classified as a pandemic by the World Health Organization on March 11, 2020, has caused economic and social disruption worldwide. Health care systems in many countries have been put to the test through dealing with many infected patients who had been diagnosed as severely affected. A total of 90.3 million people have been infected with SARS-CoV-2 by January 11, 2021, and 1.93 million died.¹

On December 14, 2020, the International Agency for Research on Cancer released the updated Global Cancer Observatory (GLOBOCAN) 2020 with new estimates on the global cancer burden, indicating that it had risen to 19.3 million cases and 10 million deaths due to cancer in 2020.²

Polish patients with cancer have also been facing the challenge of confronting the COVID-19 pandemic and many restrictions imposed on cancer hospitals to minimize the spread of SARS-CoV-2.

The aim of this study was to analyze the impact of the COVID-19 pandemic on patients with cancer in terms of the restrictions introduced in hospitals, telemedicine as well as postponement or cancellation of scheduled visits.

Materials and methods An anonymous survey entitled: "The impact of the COVID-19 pandemic on patients with cancer" was created and made available to patients treated at the Chemotherapy Department and the Chemotherapy Outpatient Clinic in Greater Poland Cancer Center. Data were collected from July 1 to July 31, 2020. A total of 310 patients participated in the survey (220 women and 90 men). The only criterion for inclusion in the survey was the diagnosis of cancer. A retrospective analysis of visits to the Chemotherapy Outpatient Clinic was separately performed. It covered the period from September 1 to November 30, 2020 and comprised 354 visits.

Ethics Participation in this anonymous survey was voluntary. All patients were informed about the design of the survey and gave oral consent to participate. The questionnaire was submitted to the Bioethics Committee at the Poznan University of Medical Sciences; however, it did not require ethical approval.

Statistical analysis The IBM SPSS Statistics 26 software (IBM Corp., Armonk, New York, United States) was used for the analysis. The significance level was assumed at a *P* value of less than 0.05. The *z* test was used to compare percentage values between the sexes. The Shapiro–Wilk test was used to check whether the data were normally distributed and the nonparametric Mann–Whitney test for the independent variables was used for data comparison.

Participants The survey had 310 respondents, with significantly more women than men (*n* = 220 [71%]) vs *n* = 90 [29%], respectively; *P* < 0.001. The mean (SD) age in the whole group was 59.5 (12.7) years, in women it was 57.9 (12.9) years, and in men 63.4 (11.4) years.

The most prevalent type of cancer among the respondents was breast cancer (*n* = 168 [54.2%]), followed by colorectal cancer (*n* = 54 [17.4%]); other types of cancer were less frequent and included liver cancer (*n* = 21 [6.8%]), prostate cancer (*n* = 19 [6.1%]), gastric cancer (*n* = 17 [5.5%]), pancreatic cancer (*n* = 10 [3.2%]), gastrointestinal stromal tumor (*n* = 5 [1.6%]), laryngeal cancer (*n* = 4 [1.3%]), lymphoma, glioma, bone cancer, soft tissue cancer, and gall bladder cancer (*n* = 2 [0.6%] each) as well as small intestine and thyroid cancers (*n* = 1 [0.3%] each).

Results Survey analysis New principles of hospital functioning during the ongoing pandemic were a cause of stress for many patients.

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TABLE 1 Level of concern about own health during the COVID-19 pandemic on a scale of 0 to 10

Variable	Whole group (n = 310)		Women (n = 220)		Men (n = 90)		Mann–Whitney test
	Mean (SD)	Median (min–max)	Mean (SD)	Median (min–max)	Mean (SD)	Median (min–max)	
Level of concern, points	5.3 (2.7)	5 (0–10)	5.5 (2.6)	6 (0–10)	4.8 (3.1)	5 (0–10)	U = 8686; P = 0.09

Abbreviations: max, maximum; min, minimum

Almost two-thirds of survey respondents (n = 192 [61.9%]) searched for information about current restrictions in the center activity on the Internet. According to the majority of patients (n = 287 [92.6%]), the hospital implemented necessary precautions to minimize the risk of coronavirus infection.

Despite the pandemic, almost three-fourths of planned visits occurred according to schedule (n = 220 [71%]), less than a quarter of them (n = 76 [24.5%]) were postponed, and 14 (4.5%) were cancelled. Among the respondents, the main reasons for the appointments were to administer systemic treatment, have a check-up at the cancer clinic, or undergo an imaging test (173, 114, and 56 answers, respectively; multiple-choice question).

The majority of respondents (n = 221 [71.3%]) did not discontinue cancer treatment and over one-fifth of them (n = 67 [21.6%]) believed that discontinuation of treatment could affect their health. Since the outbreak of the pandemic to the moment of filling in the questionnaire, approximately two-thirds of patients (n = 203 [65.5%]) had their treatment neither withheld nor postponed, whereas about one-fifth (n = 61 [19.7%]) reported such situation in the survey.

Telephone medical advice (telemedicine) has become a new form of contact between the patient and the physician, mainly concerning patients remaining in cancer care. Approximately one-third of respondents (n = 93 [30%]) declared that planned visits took place in the form of telephone medical advice. Among these patients, 38 (40.9%) were “happy that they did not have to come to the oncologist in person during the pandemic.” On the other hand, 27 individuals (29%) were afraid that something might be omitted or not noticed due to the lack of personal contact.

The question about health concerns in the face of the COVID-19 pandemic in Poland was one of the critical issues of the survey. The respondents were asked to assess their fear of SARS-CoV-2 infection on a 10-point scale. The median response in the whole group was 5 points. Women tended to be more worried about their health than men (median, 6 vs 5 points, respectively); however, this difference was not significant (P = 0.09) (TABLE 1).

More than half of the patients declared that their fear of cancer progression was stronger than the fear of coronavirus infection (n = 174 [56%]), 27% (n = 83) could not answer this question, and 17% (n = 53) were more afraid of coronavirus than of deterioration of their health due to cancer.

Visits to the outpatient clinic Due to the dynamic increase in the number of SARS-CoV-2 infections in the autumn of 2020 in Poland, it was decided to carry out a retrospective analysis of patient visits to the Chemotherapy Outpatient Clinic from September 1 to November 30, 2020. The analysis comprised 354 visits of patients with different types of cancer, including 189 (53.4%) patients with breast cancer, 78 (22%) with colorectal cancer, 51 (14.4%) with prostate cancer, and 36 (10.2%) with gastric cancer. A total of 54 visits (15.2%) took place as telephone medical advice, 11 visits (3.1%) were postponed to another date set by the clinic, and the rest (n = 289 [81.6%]) were in-person visits. In the period of a dynamic increase in the number of SARS-CoV-2 infections, the Cancer Center did not suspend patient visits, and all the measures of sanitary protection introduced at the beginning of the pandemic were maintained. The division of medical personnel into teams allowed for a continuation of the scheduled admission of patients, even in the case of SARS-CoV-2 infection among the staff.

Discussion The COVID-19 pandemic forced changes in the functioning of many medical facilities around the world. Patients with cancer are at a particularly high risk of a severe course of SARS-CoV-2 infection due to immune deficiency resulting from anticancer treatment, age, and comorbidities, as cancers usually affect the elderly.³

Guidelines issued by the most important scientific societies from abroad (European Society for Medical Oncology, American Society of Clinical Oncology) as well as the Polish Society of Clinical Oncology state that there is no scientific justification for interrupting or discontinuing systemic treatment during the COVID-19 pandemic. However, in palliative treatment, it is possible to modify the patterns and doses depending on the individual situation. Decisions should be made by multidisciplinary teams.^{4–6} Based on the results of our survey, almost three-fourths of the planned visits (71%) occurred according to schedule and only 24.8% were postponed, which indicates a good capacity of the Cancer Center. Overall, treatment was continued in 71.3% of patients despite the COVID-19 pandemic.

Telemedicine has a crucial role in maintaining contact between patients and physicians. Telephone medical advice in oncology is not a new phenomenon.⁷ As a result of this mode of contact, patients have an opportunity to talk to the attending physician, consult the results, or establish

an individual treatment plan.⁸ In the Greater Poland Cancer Center, 93 patients (30%) used telemedicine services during the analyzed period and more than one-third of them (n = 38) were happy that they did not have to pay an in-person visit to the oncologist.

In patients with cancer, the fear of cancer progression was previously found to be stronger than the fear of coronavirus infection,⁹ which is in line with the results of our survey—such opinion was declared by more than half of the respondents (n = 174 [56.1%]). During the COVID-19 pandemic the majority of patients with cancer (66.5%) were afraid of discontinuation of cancer treatment or of cancer progression if treatment is interrupted (63.2%), while only one-third of the respondents declared fear of getting infected with coronavirus.

Conclusions The main conclusions of our study are outlined below.

- Among patients with cancer, the fear of cancer progression as a result of discontinuation of cancer therapy is greater than the fear of coronavirus infection.
- The need for implementation of preventive measures against SARS-CoV-2 infection in cancer centers is very well understood by patients.
- Development of telemedicine carries great hope for patients with cancer and gives them a sense of security during the pandemic.

Limitations This retrospective analysis shows that the Greater Poland Cancer Center maintained similar levels of patients' admission in the summer and autumn of 2020. However, it did not answer the question whether the level of stress and fear of infection rose due to the increase in the number of SARS-CoV-2 infections.

ARTICLE INFORMATION

CONFLICT OF INTEREST None declared.

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