RESEARCH LETTER

# The impact of severe acute respiratory syndrome coronavirus 2 on patients in cancer clinical trials

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**Introduction** The new severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is a member of the coronavirus family that causes acute respiratory disease, called coronavirus disease 2019 (COVID-19). It was designated a pandemic by the World Health Organization on March 11, 2020.[1] The number of confirmed cases has exceeded 64.5 million, and over 1.45 million people have died in 188 countries thus far. In Poland, the number of confirmed cases has exceeded 1 million.[2]

Cancer patients, who may be immunocompromised during cancer treatment, are especially vulnerable to SARS-CoV-2. Recommendations issued by scientific organizations advise healthcare professionals on minimizing the risk of SARS-CoV-2 infection and safe continuation of treatment in patients with cancer whose treatment cannot be discontinued.[3] The spread of SARS-CoV-2 has exerted a negative influence on the clinical research industry. Cancer studies of medicinal products require several additional procedures, not part of standard treatment, for research teams and participating patients. More frequent visits to research centers and the involvement of a greater number of people on the research team oblige staff and patients to actively participate in prevention. The initial recruitment of patients for clinical trials is one of the most important steps involved in testing medicinal products in a health center. Therefore, the decision to participate in a trial in the era of the SARS-CoV-2 pandemic must be carefully considered by the research team and potential study participants.

The purpose of the current study was to collect and analyze the opinions of patients with cancer who have already participated in clinical trials with respect to taking part in a clinical trial during the SARS-CoV-2 pandemic and the risks associated with it.

**Patients and methods** Between March 26 and August 30, 2020, telephone interviews were conducted. A survey created by an anonymous author with 11 questions about the impact of the SARS-CoV-2 pandemic on willingness to participate in a clinical trial was used in telephone interviews. This approach was selected as it was considered more secure for both the researchers and prospective participants, in the context of the pandemic.

We recruited former cancer patients who had participated in clinical trials, who were available by phone, and who expressed their consent to participate in the survey. Inclusion in the study was based on prior or ongoing participation in a clinical trial that took place in the chemotherapy ward, regardless of the study's methodology. Due to small numbers of patients participating in clinical trials in Europe, the sample group of participants included only 66 respondents: 49 women (74%) and 17 men (26%).

Most patients were up to 1 year after the end of their participation in a clinical trial (49 [74%]). Also, most patients took part in phase 3 clinical trials (59 [89%]). In 51 participants (77%), the clinical trial concerned breast cancer. A total of 53 respondents (80%) participated in an open study model—the research team and the patient knew whether they were receiving the study drug, placebo, or standard therapy.

The institutional review board at Poznan University of Medical Sciences, Poznań, Poland, does not require submitting anonymous surveys for ethical evaluation. Patients were fully informed of the anonymity of their data, the scientific purpose

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of the study, and that the research did not involve any medical intervention, thus having no effect on their current treatment. All participants gave their verbal consent. The authors used their own patient database in clinical trials. The authors are listed in the study logs as principal investigator, sub-investigator, or study coordinator. Data were presented as numbers and relative frequencies.

**Result** Data from the survey are presented in TABLE 1. The analysis of the main part of the telephone interview led to the following observations. Based on question number 1, up to 49 respondents (74%) would not participate in a clinical trial during the coronavirus pandemic due to more frequent hospital visits. Cancer centers are introducing many procedures to minimize the risk of the spread of SARS-CoV-2; however, 45% of respondents are not convinced that such procedures can ensure patient safety. Regarding question number 4, as many as 53 patients (80%) claimed that research sponsors should update the informed consent forms to include information about the potential interaction of the study drug with SARS-CoV-2. Cancer treatment is characterized by reduced immunity, which 47 respondents (71%) considered a factor in the decision not to participate in a clinical trial, and 53 (80%) had thought of abandoning a clinical trial owing to the SARS-CoV-2 pandemic, although most patients were more afraid of their cancer progressing than of coronavirus infection.

Patients participating in the survey reported that limiting their contact with the research team to a minimum was essential to their willingness to continue the study; 56 (85%) said that additional visits, for example, blood collection for pharmacokinetics, should be cancelled and follow-up visits should be conducted by phone. Only 11 respondents (17%) were in favor of the trial's sponsor stopping the clinical trial, while 54 (82%) were in favor of trial sponsors providing protective measures. Most participants (55 [83%]) knew that in the case of symptoms of SARS-CoV-2 infection, the sanitary and epidemiological station should be immediately notified.

**Discussion** There are 676 clinical trials in oncology in Poland, 338 in the recruitment phase, and 338 in the active phase (www.ClinicalTrials.gov; search terms, *Poland*, *oncology*, *active*, *recruiting*). For several years, there has been an increase in the number of applications for clinical trial registration in Poland.[4] Oncology is the branch of medicine accounting for the largest number of the clinical trials market in Poland (27%).[5]

As many as 74% of former participants in clinical trials would not agree to participate in the clinical trial again during the current SARS-CoV-2 pandemic if the frequency of visits to the center would be higher than the standard treatment. A study by Yu et al[6] of 1554 cancer patients indicated that hospital visits are becoming an evident factor in SARS-CoV-2 infection spread, and therefore, appropriate procedures have to be implemented to minimize the risk of infection among patients undergoing cancer treatment.

The consent information that patients receive prior to recruitment in a clinical trial include comorbidities that may lead to interaction with the study drug, and the recruiting physician must analyze in detail whether a prospective trial participant meets all inclusion and exclusion criteria regarding comorbidities. At the moment, sponsors of clinical trials are unable to examine the study drug for possible interaction with SARS-CoV-2 infection, which 89% of respondents in a telephone interview deemed necessary in the context of inclusion in a study. Current research suggests that anxiety and depression, exacerbated by uncertainty and an increased flow of information, will increase significantly. Long-term effects on the mental health of many people, not only cancer patients, can affect their functioning in society.[7]

For cancer patients, mental comfort is a crucial aspect in the cancer treatment process; thus, additional stress can adversely affect treatment. Healthcare workers are on the front line of the fight against SARS-CoV-2; therefore, exposure to more frequent contacts with the research team and patients may increase the risk of infection and thus exclude a significant part of the medical staff from this work.[8] Implementation of telemedicine due to the pandemic may relieve the healthcare system in many countries and protect more healthcare workers and their patients.[9]

A clinical trial is a lengthy process; the average time to market is 12 years.[10] Major pharmaceutical companies in the current pandemic are focused on the development of an effective vaccine against SARS-CoV-2, which may contribute to the decline of newly registered clinical trials in various fields of medicine (www.ClinicalTrials.gov; search terms *SARS-CoV-2*, *COVID-19*, *2019-nCoV*). There are currently no publications on the possible impact of this pandemic on the clinical trials market and the recruitment of cancer patients for scientific projects. Ongoing clinical research in the field of oncology should be conducted according to the recommendations of scientific societies and research sponsors.

**Limitations of this study** The generalizability of this study is limited by the small number of patients interviewed and the fact that research results may have been affected by elevated stress levels due to constant media coverage of the spread and the risks of coronavirus.

**Conclusion** In this study, 74% of respondents would not participate in a clinical trial in the face of the prevailing SARS-CoV-2 pandemic if it required a higher frequency of visits to the research center than in the case of standard cancer treatment. Moreover, 71% of respondents would not agree to participate in a clinical trial knowing that their immunity will be compromised during

**TABLE 1** The assessment of impact of severe acute respiratory syndrome coronavirus 2 on patients with cancer

| Answer | Value |
|---|---|
| 1. Clinical trials are characterized by several procedures that require the patient to be in constant contact with the research team. Would you agree to participate in a clinical trial in the face of a coronavirus pandemic if you had to be in hospital more often than with standard treatment? | |
| Yes | 17 (26) |
| No | 49 (74) |
| 2. Oncology is the field in which the most clinical trials are conducted in Poland; the percentage of Polish patients participating in research on medicinal products is continuously growing. In your opinion, can the current situation stop the development of clinical trials in Poland? | |
| Yes | 17 (26) |
| No | 6 (9) |
| I don't know | 43 (65) |
| 3. Do you think that hospitals' necessary precautions to minimize the risk of spreading coronavirus are sufficient to allow clinical trials and safe admission of patients? | |
| Yes | 13 (20) |
| No | 23 (34) |
| I don't know | 30 (45) |
| 4. The informed consent form describes the risk of adverse events associated with the clinical trial. The state does not contain information about the effect of coronavirus infection during treatment and its impact. In the absence of such information, would you decide to participate in a clinical trial? | |
| Yes | 7 (11) |
| No | 59 (89) |
| 5. Patients undergoing cancer treatment often have reduced immunity, which may increase the risk of coronavirus infection. Would you decide to participate in a clinical trial knowing that you may be at a greater risk of coronavirus infection during your treatment in a clinical trial? | |
| Yes | 19 (29) |
| No | 47 (71) |
| 6. Do you think about resigning from participation in a clinical trial due to the spread of coronavirus in Poland? If the patient has already completed the study, would he have thought about study termination? | |
| Yes | 13 (20) |
| No | 53 (80) |
| 7. Is your fear of cancer progression greater than your fear of coronavirus infection? | |
| I am more afraid of cancer progression | 55 (83) |
| I am more afraid of coronavirus | 11 (17) |
| 8. What do you think the research team should do in a clinical trial to minimize coronavirus infection risk? (several answers can be given) | |
| Limit contact with the study participant to the necessary minimum | 66 (100) |
| Follow-up by telephone | 49 (74) |
| Abandon additional procedures, eg, additional blood donations | 56 (85) |
| Extend treatment cycles | 11 (17) |
| Take no action | 0 |
| 9. What do you think the sponsor of the clinical trial (pharmaceutical company) should do to protect the research team and clinical trial participants in the face of a coronavirus pandemic? (several answers can be given) | |
| Suspend the clinical trial | 11 (17) |
| Submit information to the research team about the possible effect of coronavirus on study drug treatment | 23 (35) |
| Provide protective measures for the research team and participants | 54 (82) |
| Take no action | 0 |
| 10. Would you feel safer if the research team contacted you during the coronavirus pandemic and asked about your health? | |
| Yes | 55 (83) |
| No | 11 (17) |
| 11. What do you think a patient participating in a clinical trial should do if he notices the following symptoms, ie, fever, shortness of breath, coughing? (several answers can be given) | |
| Notify the sanitary inspection | 54 (82) |
| Call an ambulance | 28 (43) |
| See an oncologist | 9 (14) |
| No action | 0 |

Data are presented as number (percentage).

the intended treatment. However, patients with cancer are generally much more fearful of disease progression than of coronavirus infection. Most patients agreed that study sponsors should include information regarding possible interaction between SARS-CoV-2 infection and the medication being studied in the informed consent forms.

## ARTICLE INFORMATION

**CONFLICT OF INTEREST** None declared.



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