



Patients' and healthcare personnel expectations for SARS-CoV-2 screening in dialysis unit during the Covid-19 pandemic

Jerzy Przedlacki¹ · Ewa Wojtaszek¹ · Paweł Żebrowski¹ · Mariusz Mieczkowski¹ · Tomasz Głogowski¹ · Michał Pyrża¹ · Urszula Ołdakowska-Jedynak¹

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The International Society of Nephrology recommendations for SARS-CoV-2 RT-PCR swab testing in dialysis patients and dialysis healthcare personnel [1] are the same as for the general population, despite the higher risk of infection in these groups. However, while symptomatic healthcare personnel with suspected COVID-19 should be prioritized for testing [2] and there are suggestions indicating the importance of a wider use of screening tests in both groups [3, 4], Lucy Rivett [5] showed the usefulness of the screening of all asymptomatic hospital staff in identifying infection clusters in hospital wards.

During the educational talks with patients and dialysis staff [1, 3], we noted an interest in introducing screening swab tests for SARS-CoV-2 detection in asymptomatic persons as a way of reducing asymptomatic viral transmission and increasing the sense of safety.

To further explore this screening demand, we invited all patients with end-stage kidney disease receiving maintenance hemodialysis between March and May 2020 and all healthcare personnel (doctors, nurses and ward attendants) working in the dialysis unit at our Department to complete a survey.

We hypothesized that the assessment of the sense of safety in hemodialysis patients was important due to the well known relationship between emotional stress or anxiety and adherence to the hemodialysis regimen [6].

We devised three independent questionnaires for doctors, nurses and ward attendants and patients.

All questionnaires included the question: “When do you expect a swab test for SARS-CoV-2 to be performed?” We proposed the following answers:

1. in the presence of clinical signs (fever, cough or dyspnea) and/or contact with a known SARS-CoV-2 infected person;
2. One mandatory swab test in all patients and dialysis unit HCP taken at a “time zero”, followed by swabs taken in the presence of clinical indications only (as in answer 1)
3. as in answer 1 plus additional regular swab tests.

The members of the healthcare team had an additional option: (4) as in answer 1 plus testing “on demand”, in the case of even weak clinical suspicion of SARS-CoV-2 infection.

The answers 1 and 4 were grouped together and called “clinical indications” or “diagnostic tests” in further analysis. The answers 2 and/or 3 were called “screening indications” or “screening tests” in further analysis. When the option of regular tests was selected, we asked participants to propose the time interval between the tests.

All study participants (doctors, nurses, patients) were asked to devise separate strategies for each group, as shown in Fig. 1. Patients were also asked who, in their opinion, should be responsible for determining whether a swab test in a hemodialysis patient is indicated (doctors or patients). Eventually, all patients were asked to report their sense of safety related to the risk of contracting SARS-CoV-2 while attending the dialysis unit during the COVID-19 pandemic.

The survey was preceded by patient education on COVID-19, with printed and verbal information. All participants were informed that an increased frequency of screening tests is not an alternative to self-isolation or to the use of personal protective equipment during dialysis. Participants were also informed that the survey results would not be automatically translated into an internal guideline but might serve as a basis for further discussion on this topic.

The survey was completed between April 17th and May 14th, 2020. Ninety-one questionnaires (80.5% response rate) were completed by patients (53 men and 38 women, aged

✉ Jerzy Przedlacki
jprzedlacki@wum.edu.pl

¹ Chair and Department of Nephrology, Dialysis and Internal Diseases, Medical University of Warsaw, Warsaw, Poland

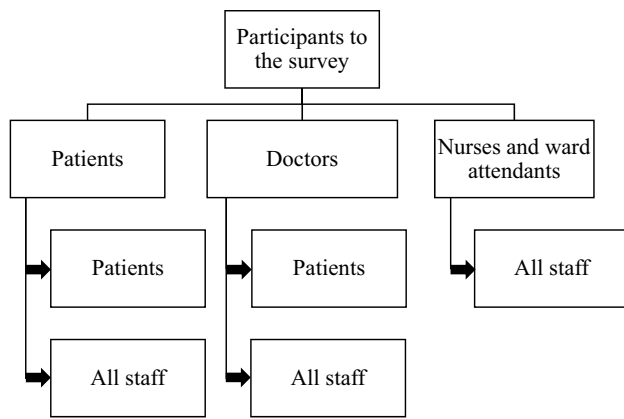


Fig. 1 Whom the answers of the survey refer to

27–92 years) and 31 by members of the healthcare team (100% response rate).

In the analysis of the healthcare personnel questionnaires, clinical indications were selected significantly more often than screening indications (23 and 8 respectively; $p < 0.001$). On the contrary, in the patient group, there was a statistically significant preference for screening, rather than for diagnostic tests (64 and 24 respectively; $p < 0.0001$). Patients expected screening tests to be performed more frequently in health care workers than in themselves, but this was not statistically significant (69 and 52 answers, respectively). The intervals between the screening tests proposed by the patients for themselves were between 1 week (11 answers) and 1 year (3 answers), and most frequently 1 month (17 answers). The intervals between the tests in the dialysis staff proposed by the patients were between 1 day (1 answer) and 6 months (2 answers), and most often 1 week (24 answers). Eighty-two out of 91 patients (6 patients did not know) thought that it is the doctors who ought to decide when a swab tests for SARS-CoV-2 is clinically indicated in a dialysis patient.

Since the first confirmed COVID-19 case in Poland (March 4th, 2020) until the conclusion of this study, COVID-19 was suspected in 10 dialysis patients in our unit. In all cases, two subsequent nasopharyngeal swab tests were negative, and the symptoms were mild.

The majority of patients felt that their safety would be improved with screening tests in the healthcare personnel and in patients, especially with regular tests. Patients perceived the healthcare personnel as being at high-risk for COVID-19, leading to higher risk for the themselves. Despite this, patients stated that they felt safe in the hemodialysis unit. They attributed this to the changes in the hemodialysis unit workflow and transportations, introduced in March 2020 (based on recommendations in the medical literature [1, 3]), frequent temperature measurements, use of personal protective equipment and

educational sessions addressing the pandemic. A contributing factor was probably the fact that no COVID-19 cases were diagnosed in our dialysis unit during the time of the study. This could be related to the increased vigilance, as well as a lower incidence of COVID-19 in Poland as compared to other countries.

In summary, the perception of safety in the context of the COVID-19 pandemic can be related to the availability of the SARS-CoV-2 screening test.

However, safety is also related to newly devised working patterns and healthcare strategies, such as social distancing and the use of personal protective equipment in patients and staff. Among the majority of the health care personnel, the perception of safety was not related to the availability of screening, but rather to the access to the “on demand” testing and to the use of recommended personal protective equipment.

Author contributions All authors contributed to the study conception and design.

Compliance with ethical standards

Conflict of interest On behalf of all authors, the corresponding author states that there is no conflict of interest.

Ethical approval This article doesn't contain any studies with human participants or animal performed by any of the authors.

Informed consent Oral informed consent from all participants.

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