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Outcomes of Kidney Transplant During the SARS-CoV-2 Pandemic at 1 Center in Poland

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ABSTRACT

The SARS-CoV-2 pandemic has significantly affected the number of transplanted organs worldwide. The rules and restrictions related to transplantation activities in Poland are included in the updated guidelines of the Polish Organizational and Coordination Centre for Transplantation. Our clinic faces the same problems as the rest of the hospitals in the country. Not only are the number of recipients falling, but there are also numerous restrictions concerning, among other things, qualification of donors and recipients and even preparation of centers for long-term care in the event of infection of organ recipients with the SARS-CoV-2 virus. Statistics showed, after an initial fall in the number of kidneys transplanted, a temporary normalization during the summer months, only to record a fall again with an increase in new cases of COVID-19. A total of 29 kidneys were transplanted at our center between March and December 2020. Kidney transplantation is not only linked to the operation itself, but also to the follow-up care of the recipients. Reduced immunity among recipients due to immunosuppressive treatment as well as comorbidities among recipients contribute to this group being at increased risk of symptomatic SARS-CoV-2 infection. The number of cases of SARS-CoV-2 infection among kidney transplant recipients at our center was 7, of which we recorded 2 deaths due to COVID-19 in the period after kidney transplant. Postoperative complications probably related to previous SARS-CoV-2 infection occurred in 1 patient.

THE COVID-19 pandemic has significantly affected the number of organs transplanted worldwide. Not only is the number of recipients falling, but also numerous restrictions (eg, qualification of donors and recipients or preparation of centers for long-term care in case of infection of an organ recipient with the SARS-CoV-2 virus) have an impact on limiting transplant activity. In Poland, the principles and restrictions concerning transplantation activity are included in updated guidelines of Poltransplant (the Polish Organizational and Coordination Center for Transplantation). The main criterion obligatory for qualifying recipients, set by Poltransplant, is performing the reverse transcriptase-polymerase chain reaction test in all potential recipients immediately before transplantation. In kidney recipients, if possible, organ transplantation should be postponed until the test results are available. Poltransplant also recommends a chest computed tomography scan for all recipients immediately prior to transplantation. Chest computed tomography is also recommended for all donors [1].

Poltransplant statistics showed, after an initial decline in the number of kidneys transplanted, a temporary normalization during the summer months, only to record a decline again with an increase in new cases of COVID-19. In the case of kidneys, 69 transplants were performed in January 2020 and 32 were performed in April, reaching 110 transplanted kidneys in July. In recent months, 43 transplanted kidneys were recorded in November and 38 in December, for a total of 586 kidneys transplanted in 2020 [2]. Comparing these figures to 2019, 73 kidneys were transplanted in Poland in the month of January, 80 in April, and more than 80 per month in November and December (Fig 1). In total, 777 kidneys were transplanted in 2019 [3].

KIDNEY TRANSPLANTATION AT OUR CENTER

Our center faces the same problems as the rest of the centers across Poland. Performing additional tests, allocating patients,

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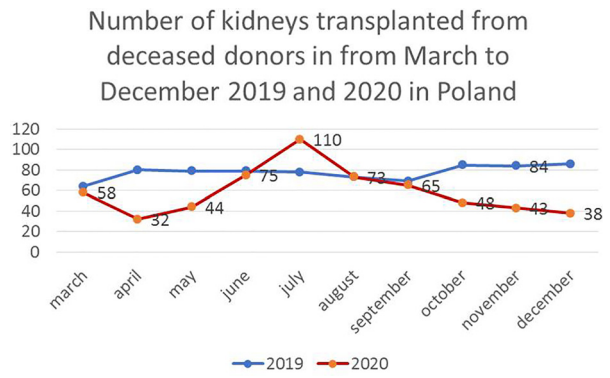

Fig 1. Number of kidneys transplanted from deceased donors in the period from March to December 2019 and 2020 in Poland.

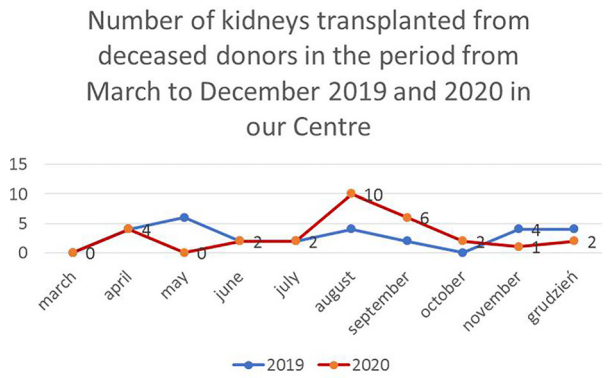

Fig 2. Number of kidneys transplanted from deceased donors in the period from March to December 2019 and 2020 in our center.

as well as preparing the team and department to work during the pandemic has been a challenge. In total, 29 kidneys were transplanted at our center between March and December 2020. In our center, as in the whole of Poland, we observed an initial drop in the number of transplanted kidneys, which was followed by an increase during the summer holidays, and then a decrease during the autumn and winter months, when the incidence of the disease increased again. Comparing these figures to the 2019 statistics in the year before the pandemic, we transplanted 1 more kidney in 2020. In 2019, 28 kidneys were transplanted at our center (Fig 2). Kidney transplantation is not only linked to the operation itself, but also to the follow-up care of the recipients.

Reduced immunity among recipients due to immunosuppressive treatment as well as co-morbidities such as hypertension, diabetes, ischemic heart disease, and metabolic syndrome contribute to the increased risk of symptomatic SARS-CoV-2 infection in this group. Symptoms of COVID-19 are similar to those of the general population: cough, shortness of breath, fever, but more often than in the general population, gastrointestinal involvement with diarrhea, causing dehydration, predominates in recipients. The concentration of acute phase protein (C-reactive protein) increases moderately with a normal concentration of procalcitonin, in a way typical for viral infections. Lymphopenia, large increases in d-dimers, ferritin and troponin are negative prognostic factors [4].

The number of cases of SARS-CoV-2 infection among renal transplant recipients at our center was 7, of which we recorded 2 deaths due to COVID-19 in the period after kidney transplant. Postoperative complications probably related to previous SARS-CoV-2 infection occurred in 1 patient in the form of increased intravascular coagulation.

CONCLUSIONS

The year 2020 was a year of new challenges for transplantation worldwide, as well as in Poland. The SARS-CoV-2 pandemic created new challenges in preparing and then managing recipients after kidney transplantation. Our center, despite the pandemic, transplanted 1 more kidney than in 2019. We had 24.14% of recipients infected with SARS-CoV-2 after kidney transplantation at our center. Of the infected recipients, 71.4% of the recovered, while 26.8% of those infected with SARS-CoV-2 died. The experience gained in 2020 and new solutions, including the possibility of vaccinating recipients and the entire population, provide a new perspective for the coming years in the world and Polish transplantology.

DATA AVAILABILITY

No data was used for the research described in the article.

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