

## DIALYSIS. EPIDEMIOLOGY AND OUTCOME

## MO819 THE NEGATIVE IMPACT OF REUSE OF DIALYZERS ON SURVIVAL RATES OF DIALYSIS PATIENTS

Olimkhon Sharapov<sup>1,2</sup><sup>1</sup>Internal Disease, Tashkent Pediatric Medical Institute, Tashkent, Uzbekistan and<sup>2</sup>Nephrology, Republican Specialized Scientific Practical Medical Center of Nephrology and Kidney transplantation, Tashkent, Uzbekistan

**BACKGROUND AND AIMS:** Until 2019, in Uzbekistan, disposable dialyzers for dialysis were reused several times due to underfunding of the system. But in 2018, the President of the Republic of Uzbekistan Shavkat Mirziyoyev signed a decree on improving the nephrological and dialysis services in the country. After that, there is a sharp increase in funding and attention to the provision of hemodialysis care to the population of our country. Thanks to this Resolution, since 2019, in all regions of Uzbekistan, only disposable dialyzers are used for hemodialysis.

To prospectively study the negative impact of the reusable use of disposable dialyzers on dialysis patients in Uzbekistan.

**METHOD:** The study took place in three dialysis centers in the country at different levels. Our observation of 165 (90 men and 75 women) patients took place for 2 years: from the beginning of 2018 to the end of 2019. The average age of the patients was  $49.7 \pm 14.1$  years. During the first 12 months (before the release of the decree of the President of the Republic and funding), dialysis patients underwent multiple uses of dialyzers. The next 12 months were completely switched to single use. The average age of the patients was  $48.1 \pm 14.3$  years. The average duration of hemodialysis was 37 (6–252) months. Survival was assessed using the Kaplan–Meier method. The confidence interval was determined by Greenwood.

**RESULTS:** During the 24 months of observation, out of 165 patients, 29.1% ( $n = 48$ ) patients died, 70.9% ( $n = 117$ ) survived (of which 11 patients underwent Tx). During 1 year of follow-up (the period of repeated use of disposable dialyzers), 21.2% ( $n = 35$ ) patients died, 78.8% ( $n = 130$ ) survived and continued to receive hemodialysis (6 patients Tx). A total of 68.6% ( $n = 24$ ) of patients died from cardiovascular complications. The survival rate for 1 year (multiple use period) was  $S(t) = 0.796$  [95% confidence interval (95% CI) 0.736–0.856]. Over the next 12 months (single use period), out of 124 patients continuing to receive hemodialysis, 10.5% ( $n = 13$ ) patients died, 89.5% ( $n = 111$ ) patients survived (5 patients Tx). A total of 53.8% ( $n = 7$ ) of these deceased patients died from CVD. The survival rate at the second year (single use period) was  $S(t) = 0.894$  [95% CI 0.839–0.948].

**CONCLUSION:** Compliance with the standards for hemodialysis, in particular, the single use of disposable dialyzers for hemodialysis sessions, leads to a decrease in the lethality of dialysis patients. The transition from multiple to single use of disposable dialyzers in one dialysis center in Uzbekistan showed a significant increase in survival of 12.3%.

## MO820 COMPARISON OF ALL-CAUSE-MORTALITY BEFORE AND AFTER COVID-19 VACCINATION IN A HEMODIALYSIS CENTER

Vahideh Yavari

Dr Yavari Nephrology Day Clinic, Branch of Research, Shiraz, Iran

**BACKGROUND AND AIMS:** Control of COVID-19 outbreaks in hemodialysis wards has been a great challenge for dialysis ward managers during the pandemic. Besides, frequent patient education and provision of sanitation and prevention protocols, COVID-19 vaccination brought light to systematic control of COVID mortality. The aim of this study was to assess the effect of the COVID-19 vaccination on all-cause mortality in our hemodialysis ward.

**METHOD:** Crude and age-adjusted mortality rates of 2-time frames, i.e. 6 July–6 December 2020 and the same period in 2021 (before and four weeks after full vaccination against COVID-19 with Sinopharm (Beijing): BBIBP-CorV) were compared. The data were processed with SPSS software version 26.

**RESULTS:** From 6 July to 6 December 2020, the crude all-cause-mortality rate of our hemodialysis center was 9.12% (23 out of 252 patients). Between 6 July 2021 and 5 December 2021, the crude all-cause-mortality rate was 6.74% (17 out of 252 patients). The same result was found after age adjustment of the mortality rates.

**CONCLUSION:** COVID-19 vaccination reduced the all-cause mortality in our hemodialysis ward, as reported in the general population. Further multi-center studies are encouraged to study the effect of vaccination on the number of severe cases and the rate of hospitalization in this group of patients.

## MO821 QUALITY OF LIFE AND DEPRESSION IN HEMODIALYSIS PATIENTS

Ghada Denden, Nouha Ben Mahmoud, Ahmed Letaief, Mouna Hammouda, Manel Ben Salah, Meriem Ben Salem, Aloui Sabra and Habib Skhiri

Nephrology, Fattouma Bourguiba Hospital, Monastir, Tunisia

**BACKGROUND AND AIMS:** End-stage renal disease (ESRD) has certainly an impact on patients' health-related quality of life (HRQoL). Depression is, also, highly prevalent in hemodialysis patients. This study aimed to evaluate HRQoL, the prevalence of depression, its associated factors, and its impact on quality of life in our population.

**METHOD:** This was a cross-sectional study including 70 hemodialysis patients in Monastir, Tunisia. Depression was evaluated using the Beck Depression Inventory (BDI). Quality of life was assessed with the Short-Form 36. Data were also collected on sociodemographic, laboratory (albumin, parathormone, hemoglobin and phosphorus) and dialysis (dialysis vintage, vascular access and hemodialysis adequacy) characteristics. The analysis was performed with descriptive and analytical statistics.

**RESULTS:** Among 70 patients, 64.3% were men. The mean age was  $49 \pm 15.7$  years old. High blood pressure, diabetes and dyslipidemia were the most common comorbidities. Low drug adherence was frequent. The global average score according to the SF-36 was 38.2. The QOL was impaired in 64.2% of the cases. We have identified five variables correlated with impaired QOL: lack of autonomy, a dialysis rhythm of 3 times a week, an age  $>60$  years, low social economic level and living in rural areas. Depression was present in 14.2% of the sample. Depressed patients presented poor quality of life, lower serum albumin and higher parathormone levels.

**CONCLUSION:** Our study highlights the high frequency of QOL impairment in patients on hemodialysis. Actions aimed at changing some factors associated with reduced QOL can promote well-being.

## MO822 HUMORAL RESPONSE AND BREAKTHROUGH INFECTIONS WITH SARS-COV-2 B.1.617.2 VARIANT IN VACCINATED MAINTENANCE HEMODIALYSIS PATIENTS

Keren Cohen Hagai<sup>1,2</sup>, Ori Wand<sup>3</sup>, Naomi Nacasch<sup>1</sup>, Moshe Shashar<sup>4</sup>, Ayelet Grupper<sup>2,5</sup>, Daniel Erez<sup>1</sup>, Pnina Shitrit<sup>6</sup> and Sydney Bencherit<sup>1,2</sup>

<sup>1</sup>Nephrology, Meir Medical Center, Kefar Sava, Israel, <sup>2</sup>Sackler Faculty of Medicine, Tel Aviv University, Tel Aviv-Yafo, Israel, <sup>3</sup>Pulmonology, Meir Medical Center, Kefar Sava, Israel, <sup>4</sup>Nephrology, Laniado Hospital, Netanya, Israel, <sup>5</sup>Nephrology, Tel Aviv Sourasky Medical Center, Tel Aviv-Yafo, Israel and <sup>6</sup>Meir Medical Center, Infection Control Unit, Kefar Sava, Israel

**BACKGROUND AND AIMS:** Breakthrough COVID-19 may occur in vaccinated people and may result from declining vaccine effectiveness or highly transmittable SARS-CoV-2 variants, such as the B.1.617.2 (delta) variant. The recent emergence of the Omicron (B.1.1.529) variant has heightened this issue.

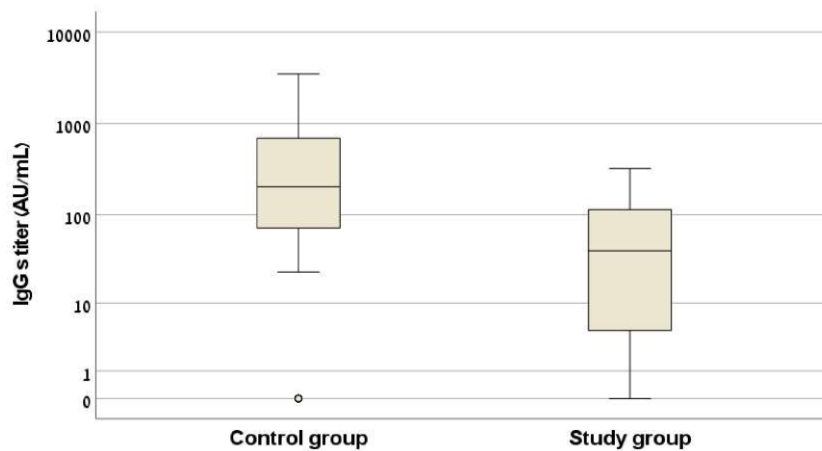
We investigated risk factors and outcomes for infection with the delta variant among vaccinated hemodialysis patients.

**METHOD:** Patients on maintenance hemodialysis who received two doses of the BNT162b2 (Pfizer-BioNTech) vaccine were categorized into the study group who developed COVID-19 and controls who did not in retrospective, observational and comparative study.

We compared risk factors for developing COVID-19 between two study groups and assessed clinical outcomes, including 30-day mortality rates.

**RESULTS:** A total of 25 cases of breakthrough SARS-CoV-2 infection were compared with 91 controls without. Breakthrough infection was associated with chronic immunosuppressive treatment, hematological malignancies and low antibody levels against SARS-CoV-2 spike protein ( $P = 0.001, 0.006$  and  $0.4$ , respectively). All COVID-19 cases occurred at least 5-months after vaccination and were caused by the B.1.617.2 variant in at least 23/25 cases. COVID-19 was categorized as severe or critical disease in 11/25 patients (44%) and 52% required hospitalization and COVID-19-directed treatment. The source of infection was nosocomial in 6/25 cases (24%), and healthcare-related in additional 3/25 (12%). Mortality rate was 20%, and overall mortality was significantly higher in subjects who developed COVID-19 than in controls (odds ratio for all-cause mortality 7.3, 95% confidence interval 1.6–33.2;  $P = 0.004$ ).

**CONCLUSION:** Breakthrough COVID-19 with the B.1.617.2 variant can occur in vaccinated hemodialysis patients and is associated with immunosuppression and a weaker vaccine immune response. Infections may be nosocomial and result in significant morbidity and mortality.



**FIGURE 1:** Box plot of baseline IgG anti-S titer in study groups: Mean IgG anti-spike levels in the study group were  $89.1 \pm 114.5$  AU/mL versus  $533.7 \pm 726.8$  AU/mL in the control group,  $P = 0.1$ .

**MO823 PSYCHOLOGICAL IMPACT OF COVID-19 IN HEMODIALYSIS PATIENTS**

Rania Affi, C. Maazouzi, Mohammed Zamd, N. Mtioui, Ss Elkhayat, G. Medkouri, B. Ramdani and M. Benghanem

*Nephrology, Dialysis, Transplantation, CHU Ibn Rochd, Casablanca, Morocco*

**BACKGROUND AND AIMS:** The COVID-19 pandemic has required containment measures in Morocco, as well as practice changes in haemodialysis centres.

Haemodialysis patients are at risk of aggressive symptoms of COVID-19, which significantly increases mortality. This particular situation creates psychological disorders in those patients, such as anxiety, sleep disorders and irritability. The objective of our study is to assess the mental health status of haemodialysis patients during the pandemic and the psychological impact of confinement. This assessment will allow the adaptation of a supportive relationship with the patient through adequate psychological management.

**METHOD:** This is a mono-centric, non-interventional study that included all haemodialysis patients at the haemodialysis centre of the nephrology department at Ibn Rochd University Hospital during the confinement period (March 2020–June 2020). This study is based on a pseudonymized paper questionnaire, during confinement, based on two psychiatric scores (GAD-7, PHQ-9) that assess anxiety, depression as well as sleep disorders, which allowed us to collect socio-demographic data, anxiety depressive symptomatology and an assessment of sleep disorders.

**RESULTS:** The average age of our population is 47.4 years old, 54% of whom are men. Almost 34.54% have a primary level of education. The higher level of education was 14.45%, while 14.54% are illiterate. Regarding family status, 45% are married. Those who are living alone accounted for 55%. Before confinement, 57.15% patients were daily workers; 10 others had no work, among 3 of them were students; the 5 others were managers. After starting haemodialysis, 65.7% patients stopped their work. We noted that 38% of patients had a feeling of nervousness and anxiety for several days, while 9% had the same symptoms for more than half of the day. Concerning excessive anxiety, it was noted in 34% of patients for several days, while 16% showed excessive anxiety for more than half of the days. Concentration difficulties were noted in 41% of the patients for over several days and 5% more than half of days, while 58% of patients never had difficulties of concentration. The irritability feeling over several days was noted in 43% of patients, while 5.4% presented a feeling of irritability more than half of the days. Difficulty falling asleep is noted in 49% of patients, while 51% of patients have no difficulty falling asleep. The feelings of sadness, depression and despair are noted in 49% of patients for several days and 5% for more than half of the days. Sleep disorders were noted in 60% of patients on several days, while 40% had sleep disorders for more than half of the days. Loss of appetite was noted in 65% of patients. A lack of self-confidence was noted for several days in 43% of patients. 29%

of patients lost the pleasure of having fun for several days. A total of 36% were slow or restless for several days. None of our patients expressed a desire to end their life, and 49% did not lose the pleasure of doing their daily activity.

**CONCLUSION:** The mental health of dialysis patients assessed appears to be unaffected during this first wave of the pandemic. This could be due to high resilience, higher unemployment among dialysis patients, a reduced impact of social distancing on the haemodialysis population, strict precautionary measures and perceived support from health workers, who can all contribute to addressing this pandemic.

**MO824 UTILITY OF NOVEL WIRELESS MOBILE ULTRASOUND TECHNOLOGY VIA NEPHROLOGISTS IN EGYPTIAN HEMODIALYSIS PATIENTS**

Moataz Fathy Abdelnaeem<sup>1</sup>, Tarek Abdelaziz<sup>1,2</sup>, Sameh Eldewi<sup>1</sup> and Reham Abdelghany<sup>1</sup>

<sup>1</sup>*Nephrology, Faculty of Medicine Cairo University, Cairo, Egypt, and* <sup>2</sup>*Blackpool Teaching Hospitals NHS Foundation TRUST, Medicine, Egypt*

**BACKGROUND AND AIMS:** Ultrasound and ultrasound-guided procedures are being widely applied in the field of clinical and interventional nephrology [1]. Many nephrology training programs still lack structured ultrasound training. Handheld mobile ultrasound provides affordability and ease of usage of the techniques [2]. To test the feasibility of hand-held mobile ultrasound in detecting incidental asymptomatic arterio-venous (AV) access or parathyroid gland as well as assessing volume status and detection of pericardial effusion [3].

**METHOD:** We recruited 344 patients with end-stage renal disease undergoing regular hospital haemodialysis. Informed consents for the procedure were obtained from all patients. All patients have undergone post-session chest ultrasound, bedside cardiac ultrasound to detect pericardial effusion, neck ultrasound to detect parathyroid adenoma and arterio-venous access ultrasound scanning. All ultrasound scanning was done by the same operator using: high frequency head (curvilinear head) to examine parathyroid glands, AV access and lung ultrasound. Low frequency (linear head) to examine the abdomen and pelvis and to detect pericardial effusion.

**RESULTS:** Lung ultrasound scanning detected pleural effusion in 3 patients and an increase in the B line in 12 patients. Pericardial effusion was detected in one patient. Parathyroid adenoma in one patient. Native AVF access stenosis in three patients and pseudo-aneurysm of AVG in one patient.

**CONCLUSION:** The use of handheld mobile ultrasound via mobile application enabled an easy and fast way to scan a large number of haemodialysis patients and detect asymptomatic pleural effusion, pericardial effusion, AV access malfunction and parathyroid adenomas. The integration of mobile ultrasound techniques into the care of end-stage renal disease on haemodialysis may be of significant added on value.