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THE IMPACT OF SARS-COV-2 INFECTION ON MORTALITY IN CKD PATIENTS – A SINGLE-CENTER PILOT STUDY

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BACKGROUND AND AIMS: Since the beginning of 2019, once COVID-19 pandemic was declared, there is a keen interest in understanding the impact of SARS-CoV-2 infection on chronic kidney disease (CKD) patients, regarding the influence on CKD progression and the suitable therapy options, as most of the indicated medications are contraindicated for a glomerular filtration rate (GFR) below 30 ml/min, and, in addition, there is a little experience in dialyzed patients. The aim of our single-center pilot study is to determine the influence of SARS-CoV-2 infection on CKD patients' (dialyzed or not) outcome and hospitalization rate.

METHOD: We evaluated the patients diagnosed with COVID-19, admitted in our Department between October and December 2020. The inclusion criteria were: age > 18 years old, diagnosis of CKD – predialysis and hemodialyzed patients. The exclusion criteria were: patients without pre-existing CKD. All included subjects signed the patients' consent. To all included patients we performed the following tests: total blood count, erythrocyte sedimentation rate, C-reactive protein, fibrinogen, ferritin, serum free iron, serum creatinine, urea, uric acid, calcemia, total proteins, electrolytes and acid-base balance, urinary exams (including urine culture), coagulation and lipid profile, quantitative D-dimer, IL-6, procalcitonin, and imaging tests (CT, pulmonary Rx, abdominal ultrasonography). The patients were monitored by the infectious disease medical team that adjusted the therapy according to the patients' lab and imaging results. The specific treatment for SARS-CoV-2 infection included primary anti-interleukin receptor monoclonal antibody drugs (such as Anakinra, Tocilizumab), corticotherapy (dexamethasone), anti-retroviral therapy (remdesivir, favipiravir) only in hemodialyzed patients or in those presenting an eGFR > 30 mL/min, antibiotics, antifungal drugs, and oxygen-therapy. Usually, anti-interleukin receptor monoclonal antibody consisted in 7 doses, administrated every 48 hours. The dose of all other recommended drugs was adapted according to the patients' eGFR.

RESULTS: A total of 63 patients were admitted in our Department and were under our care, presenting medium or severe forms of SARS-CoV-2 infection. After applying the inclusion and exclusion criteria, only 38 patients were considered eligible: 21 male patients (mean age 63.52 ± 13.82 years), and 17 female patients (mean age 67.24 ± 12.83 years). 31.57% represented the percentage of death during the hospitalization (due to the severity of the disease, 4 patients died within 24 hours) in patients presenting heterogenous comorbidities, such as diabetes mellitus, hypertension, pre-existing glomerulonephritis and/or oncological pathologies; we also noticed that female gender represented 58.33% of the deceased patients. The mean hospitalization period in the deceased patients was 6.42 ± 5.38 days – 4 ± 3.21 days in female gender, and 9.8 ± 6.30 days in male gender.

CONCLUSION: Most of our patients, although diagnosed with medium and severe forms of SARS-CoV-2 infection, presented a favorable evolution, and an adequate response to the specific medication. We observed that most of the deceased cases were female patients, and compared to the male deceased subject, female deceased patients presented a lower period of hospitalization. Therefore, probably female CKD patients with comorbidities and diagnosed with COVID-19 are more predisposed to an unfavorable prognosis. Further and larger clinical trials are necessary to validate the impact of SARS-CoV-2 infection on mortality in CKD patients.