MO497 | **COVID-19 INCIDENCE AND MORTALITY IN PRE-DIALYSIS CHRONIC KIDNEY PATIENTS DURING THE FIRST WAVE OF THE PANDEMIC IN ITALY**

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BACKGROUND AND AIMS: Many studies are available that reported a higher risk of COVID-19 disease among patients on dialysis or with kidney transplantation, and the poor outcome of COVID-19 in these patients. Patients in conservative therapy for chronic kidney disease (CKD) have received lower attention, therefore little is known about how COVID-19 may affect this population. The aim of this study was to analyse the COVID-19 incidence and mortality in CKD patients followed up in an integrated healthcare program, living in a small area of Northern Italy.

METHOD: The study population included CKD patients from the Emilia-Romagna Prevention of Progressive Renal Insufficiency (PIRP) project, followed up in the 4 nephrology units (Ravenna, Forlì, Cesena and Rimini) of AUSL Romagna (Italy) and alive at 1.01.2020. All patients were in conservative therapy and none of them had initiated dialysis or received kidney transplantation. The hospital discharge database was used to identify patients hospitalized with COVID-19 up to 31.07.2020, and the mortality database was used to assess mortality among patients with COVID-19 at the same date. Multivariable logistic regression was used to identify predictors of COVID-19 disease, and Kaplan-Meier survival analysis to identify predictors of COVID-19 mortality. Excess mortality of 2020 compared to mortality in 2015-19 in the PIRP cohort was also estimated.

RESULTS: COVID-19 incidence among CKD patients was 4.09% (193/4716 patients), while in the general population it was 0.46% (5,195/1,125,574). COVID-19 was more likely in CKD patients with older age (Odds Ratio=1.038), cardiovascular comorbidities (OR=2.217), COPD (OR=1.559) and less likely in patients living in the province of Ravenna (OR=0.468), that was hit later by the first wave of pandemic compared to the other areas of AUSL Romagna. Baseline eGFR was lower in CKD patients with COVID-19 (31.7 vs. 35.8 ml/min/1.73 m^2), but this difference did not reach statistical significance (p=0.066). As of 31.07.2020, the crude mortality rate among CKD patients with COVID-19 was 44.6% (86/193), compared to 4.7% (215/4523) in CKD patients without COVID-19 and to 14.5% (4289/29670) in the general population with COVID-19 of the Emilia-Romagna region. Factors associated with mortality of CKD patients with COVID-19 were older age (p=0.034) and the period of COVID-19 onset (p=0.003). The highest crude mortality rate (71.4%) was found in CKD patients for whom COVID-19 onset occurred between 8 and 21 March. The excess mortality of January-July 2020 with respect to the average mortality of January-July 2015-19 in the PIRP cohort was +17.7%, corresponding to 77 excess deaths. March-April was the period with the highest excess mortality (+69.8%), while in January-February a 15.9% lower mortality was observed with respect to the corresponding months of the five previous years.

CONCLUSION: In our study, including a cohort of regularly followed up CKD patients, the risk of COVID-19 disease and of COVID-19 related mortality was comparable, or even somewhat higher, to that observed in patients on dialysis and those who received kidney transplantation. The incidence of COVID-19 in CKD patients was higher in the areas of AUSL Romagna earlier affected by the pandemic wave, whereas mortality rates were similar across all areas. CKD patients represent a population very vulnerable to COVID-19 disease, and their protection should be highly prioritized in the models of care and prevention measures.