# 59th ERA Congress, 19-22 May 2022

## Congress Abstracts

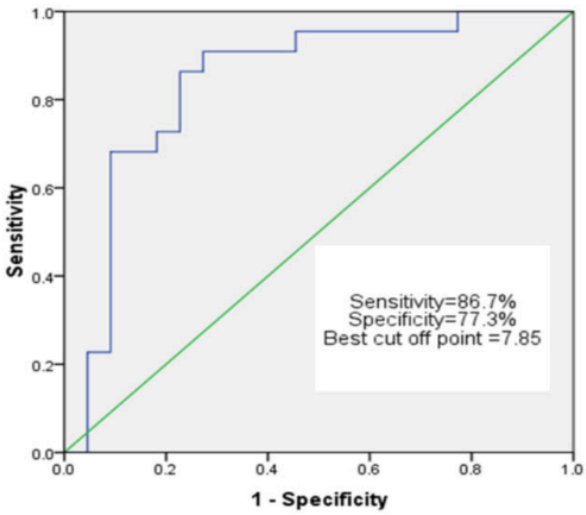


**FIGURE 2:** ROC curve for urinary haemopexin in predicting lupus nephritis versus non-nephritis.

## MO143 DYNAMICS OF RENAL FUNCTION DURING ANTICOAGULANT THERAPY IN STAGE 4 CKD AND AF

Ranokhon Igamberdieva[1] and Sherzod Abdullaev[1,2]

*[1]Internal Medicine, Nephrology and Hemodialysis, Tashkent Pediatric Medical Institute, Tashkent, Uzbekistan, and [2]Immunogenetics, Republican Scientific and Practical Medical Center of Nephrology and Kidney Transplantation, Tashkent, Uzbekistan*

**BACKGROUND AND AIMS:** Atrial fibrillation (AF) significantly increases the risk of developing end-stage chronic kidney disease (CKD). It should also be borne in mind that as kidney function deteriorates the risk of AF progression and its complications increases. Various studies have shown the superiority of new oral anticoagulants (NOACs) over vitamin K antagonists (VKAs) in CKD stages 1–3. Patients with stage 4–5 CKD were not included in many of these studies because of the high risk of impaired renal function and various complications. Clinical data on the use of NOACs in this group of patients are limited, which determines the relevance of conducting studies in comparison with VKA. The aim of our study was to monitor the dynamics of renal function in patients with stage 4 CKD and AF on the background of anticoagulant therapy.

**METHOD:** The studies included 106 patients, of which 73 patients took rivaroxaban (at a dose of 15 mg/day) and 33 patients took warfarin (the dose was selected individually according to INR). The duration of the study is 18 months. The level of creatinine in the blood plasma was determined in all patients. The calculation of the glomerular filtration rate (GFR) was carried out according to the CKD-EPI formula, as well as creatinine clearance (CC) according to the Cockcroft-Golt formula. To assess the dynamics of changes in the level of creatinine and GFR over time, linear mixed models were built for each group. The time in months and the anticoagulant (rivaroxaban or warfarin) taken were selected as fixed effects.

**RESULTS:** During the study, there was a significant improvement in the dynamics of creatinine and GFR in the rivaroxaban group when compared with the warfarin group. When considering a linear model of creatinine level, the interaction coefficient time * drug is –1.3, GFR according to the CKD-EPI formula 0.21, CC 0.20 ($P < .001$). In patients receiving rivaroxaban, there was an increase in GFR and a decrease in creatinine levels, whereas patients taking warfarin showed the opposite dynamics of indicators of renal function. The dynamics of creatinine levels within 18 months in the rivaroxaban group decreased from 195 to 180 $\mu$mol/L, and in the warfarin group increased from 203 to 221 $\mu$mol/L on average ($P < .001$). Dynamics of GFR according to the CKD-EPI formula in the NOACs group on average from 23.0 to 25.5 mL/min/1.73 m$^2$, and CC according to the Cockcroft-Golt formula 27.0 to 31.0 mL/min. These indicators in the VKA group on average were equal from 22.0 to 20.0 mL/min/1.73 m$^2$ (GFR), and 25.0 to 23.0 mL/min (CC). It should be noted that during the study, the transition from the fourth stage of CKD to the third stage was recorded in 32 (43.8%) patients in the rivaroxaban group and in 11 (33.3%) patients in the warfarin group ($P = .26$). However, there was also a transition of four patients (3.8%) to the fifth stage.

**CONCLUSION:** Taking rivaroxaban was accompanied by an improvement in renal function, which may indicate a nephroprotective effect of the drug. For the assessment of renal function in patients with AF, the use of the CKD-EPI formula seems to be preferred. These studies indicate a favorable safety profile for rivaroxaban versus warfarin in patients with stage 4 CKD and AF.

## MO144 BEHIND THE SCENES: A YEAR IN AN ONCO-NEPHROLOGY OUTPATIENT CLINIC IN ITALY

Marta Pirovano[1], Laura Cosmai[1], Giulia Vanessa Re Sartò[1], Annalisa Bramati[2], Nicla La Verde[2] and Maurizio Gallieni[1,3]

*[1]Nephrology and Dialysis, ASST Fatebenefratelli-Sacco, Milan, Italy, [2]Medical Oncology, ASST Fatebenefratelli-Sacco, Milano, Italy, and [3]Department of Biomedical and Clinical Sciences, University of Milan, 'L. Sacco', Milan, Italy*

**BACKGROUND AND AIMS:** The progressive increasing awareness of the need for a multidisciplinary management of cancer patients, the rapid development of new anti-cancer therapies, the prolongation of oncological patients' survival and the increased incidence of chronic kidney disease (CKD) over the years have created a breeding ground for the affirmation of onconephrology. This subspeciality of nephrology aims to fully deal with the complex and bidirectional relationship between cancer and the kidneys: on one hand, the tumour presence or its treatment can cause renal damage; on the other hand, a kidney disease can alter the bioavailability and therefore the effectiveness of the treatment itself.

Well-defined multidisciplinary management of cancer patients with kidney disease can thus ensure that the highest quality of care could be administered by a dedicated team with experience in these complex issues.

The objective of our study was to describe patients who were referred to our onconephrology clinic during 2021, in order to offer an analysis of their main characteristics, with the overall aim of providing experience-based considerations that will initiate further discussion on this growing subspecialty area.

**METHOD:** We performed a retrospective data collection of naive patients attending our onconephrology outpatient clinic over a 1-year period. We collected data regarding epidemiological characteristics, renal function, primary tumour, cancer therapy and reason why they were referred for a nephrological evaluation. Main characteristics of the patients are summarized in Table 1.

**RESULTS:** A cohort of 323 consecutive visits was analysed; 175 new cases; 110 males and 65 females, with an average age of 70 years. eGFR by CKD-EPI was 43 mL/min/1.73 m$^2$ (5% CKD stage I, 12% stage II, 19% stage IIIA, 39% stage IIIB, 21% stage IV, and 4% stage V—FIG 1A). Primary tumours of the patients are summarized in Figure 1B.

A total of 37 first and 81 subsequent consultations were performed for clinical evaluation, 30 versus 7 for worsening CKD, 23 versus 10 for a pre-contrast enhanced computed tomography, 19 versus 16 for renal toxicity from cancer treatment, 15 versus 5 for electrolyte disturbances, 13 versus 9 in light of the possible initiation of an oncological therapy, 12 versus 9 for acute kidney injury, as summarized in Figure 1C. Overall, 93 patients (53%) were not on active oncological therapy, while, among the others, 18 received cytotoxic chemotherapy, 25 molecularly targeted agents, 22 immunotherapy, 8 hormone therapy and 9 combination of agents of multiple classes (Figure 1D).

**CONCLUSION:** The above retrospective results shed light on the main causes of access to an onco-nephrology outpatient clinic, once again confirming both the relevance of onconephrological issues and the increasing necessity to address them in a dedicated setting. Since onconephrology is presently more experience-based than evidence-based, and since only with a thorough knowledge of the issues of onco-nephrology, together with a tight interspecialty collaboration, we can provide these patients better treatment and management, the representative set of patients we presented can be useful to understand their commonest needs and to increase the awareness on these issues, still too often underrecognized and undermanaged, due to a certain nihilistic attitude towards cancer pts with kidney issues. Finally, preliminary efficacy results (not reported here) suggest a clinically relevant benefit in terms of nephrological outcome.

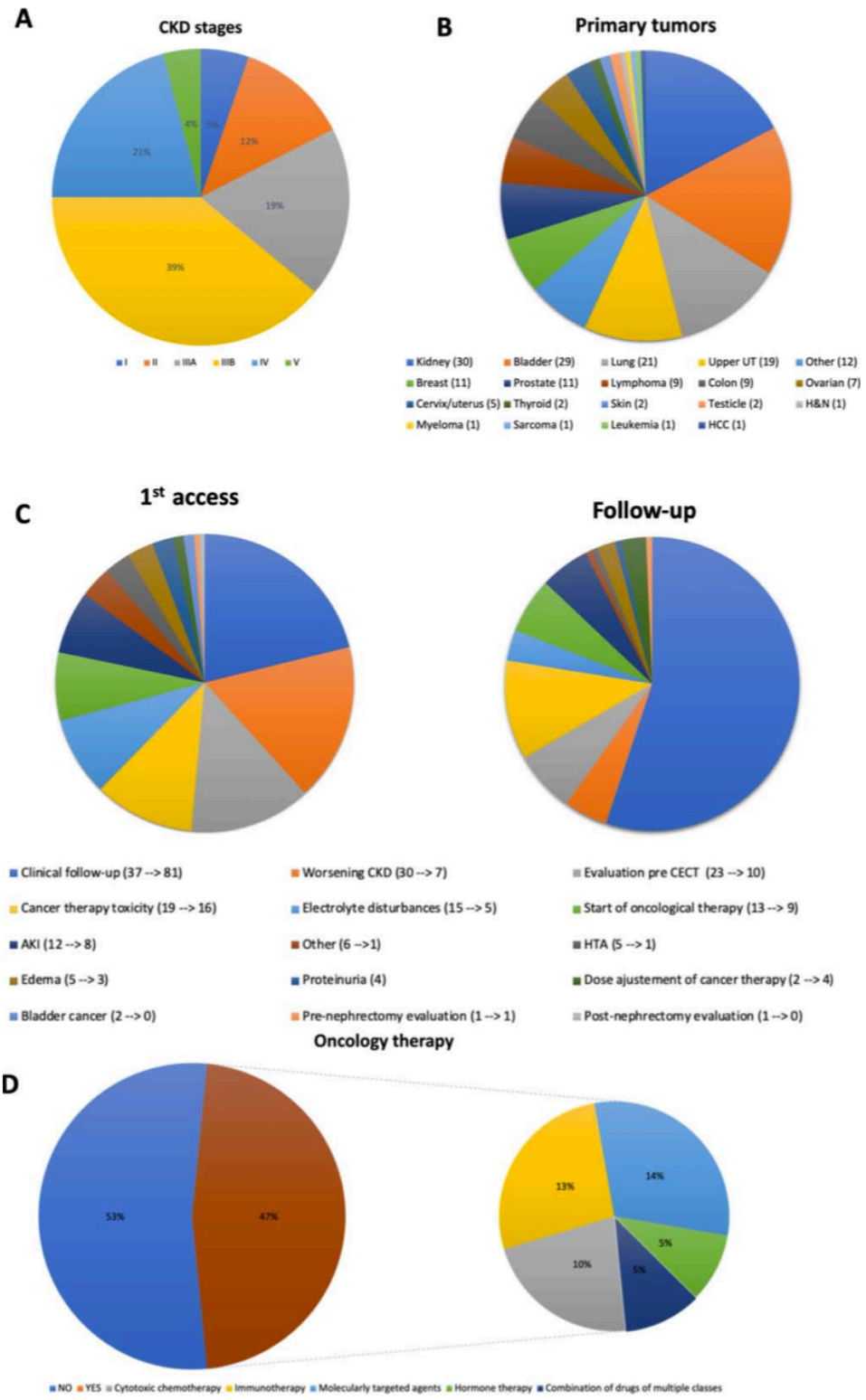

**Table 1.**

| | | |
|---|---|---|
| No. of patients | Overall | 323 |
| | First-time visits | 175 |
| | Follow-up visits | 148 |
| Mean age | | 70 years (38–92) |
| Sex | Males | 110 (63%) |
| | Females | 65 (37%) |
| Average eGFR (CKD-EPI) | At first consultation | 43 mL/min/1.73 $m^2$ |
| | at follow-up visit | 36,5 mL/min/1.73 $m^2$ |
| CKD stage | Stages I and II | 30 (17%) |
| | Stage IIIA | 32 (19%) |
| | Stage IIIB | 67 (39%) |
| | Stage IV | 36 (21%) |
| | Stage V | 7 (4%) |
| Active oncological therapy | Yes | 82 (47%) |
| | No | 93 (53%) |
| Type of oncological therapy | Cytotoxic chemotherapy | 18 (22%) |
| | Molecularly targeted agents | 25 (30%) |
| | Immunotherapy | 22 (27%) |
| | Hormone therapy | 8 (10%) |
| | Combination of drugs of multiple classes | 9 (11%) |

MO145

## CHEST CT TOTAL SEVERITY SCORE ON ADMISSION TO PREDICT IN-HOSPITAL MORTALITY IN PATIENTS WITH ACUTE AND CHRONIC RENAL IMPAIRMENT WITH COVID-19 INFECTION

Samar Tharwat[1], Gehad A. Saleh[2], Marwa Saleh[3], Ahmad M. Mounir[2] and Mohammed Kamal Nassar[3]

*[1]Department of Internal Medicine, Rheumatology & Immunology Unit, Faculty of Medicine, Mansoura University, Mansoura, Egypt, [2]Diagnostic Radiology Department, Faculty of Medicine, Mansoura University, Mansoura, Egyptt, and [3]Department of Internal Medicine, Mansoura Nephrology & Dialysis Unit (MNDU), Faculty of Medicine, Mansoura University, Mansoura, Egypt*

**BACKGROUND AND AIMS:** COVID-19 is an infection that has spread widely and quickly over the world, resulting in a pandemic with substantial consequences for the sociopolitical environment and healthcare delivery systems. The aim of this study was to explore the clinical, laboratory characteristics and chest CT severity score in patients with renal impairment who died with COVID-19 infection.

**METHOD:** This retrospective study examined the electronic clinical and laboratory data of consecutive patients aged 18 years and older, with serum creatinine > 2 mg/dL who tested positive for COVID-19 and admitted to Mansoura University Hospital between June 2020 and May 2021. CT scans of the chest were retrospectively examined by one reviewer with 10 years' experience in thoracic imaging for the following characteristics based on the Fleischner Society Nomenclature recommendations: ground-glass opacity (GGO), consolidation, nodules, crazy-paving pattern, subpleural lines, bronchial wall thickening, lymph node enlargement and pleural effusion.

We attempted to measure the magnitude of the abnormalities by the total severity score to assess the severity of lung parenchymal involvement. The total severity score was primarily a numeric score that assessed the existence of GGOs, consolidation or mixed GGOs in each of the five lobes of both lungs. Each lobe will be rated from 0 to 4 points based on the percentage of the involved lobe: (0) = 0%, (1) = 1–25%, (2) = 26–50%, (3) = 51–75% or (4) = 76–100%. The overall score, which varies from 0 to 20, is the sum of the points from each lobe. Death events were collected, and the ROC curve analysis for CT severity score was used to determine the best cutoff that predict mortality.

**RESULTS:** Of a total 100 patients, 54 were males, with a mean age of 60 ± 15 years. Sixty patients died. Mortality was higher in those with acute renal impairment ($P = .033$) than chronic kidney disease. Non-survivors had higher respiratory rate ($P = .000$), C-reactive protein (CRP) ($P = .003$), ICU admission ($P = .000$), oxygen supply needs ($P = .005$), pulmonary consolidation ($P = .000$) and crazy paving pattern ($P = .000$). Furthermore, non-survivors had higher CT chest total severity score ($P = .000$).

Univariate regression analysis showed increasing odds of in-hospital mortality associated with increased respiratory rate (OR 1.149, 95% CI 1.057–1.248, $P = .001$), total bilirubin (OR 2.532, 95% CI 1.099–5.836, $P = .029$), lactate dehydrogenase (OR 1.001, 95% CI 1.000–1.003, $P = .018$), CRP (OR 1.010, 95% CI 1.002–1.017, $P = .012$), invasive mechanical ventilation (OR 7.667, 95% CI 2.118–27.755, $P = .002$), predominant pattern of pulmonary consolidation (OR 21.714, 95% CI 4.799–98.261, $P = .000$) and high CT chest total severity score (OR 2.082, 95% CI 1.579–2.745, $P = .000$) . The optimum cut-off value of CT chest total severity score to predict in-hospital mortality was 8.5 with a sensitivity of 86.7% and a specificity of 87.5% (Figure 1).

**CONCLUSION:** In-hospital mortality is high in patients with renal impairment with COVID-19 infection especially those with acute renal impairment. High bilirubin, predominant pattern of pulmonary consolidation and CT chest total severity score are the most significant predictors of mortality in these patients. CT chest total severity score on admission ≥8.5 could effectively predict in-hospital mortality in these patients.

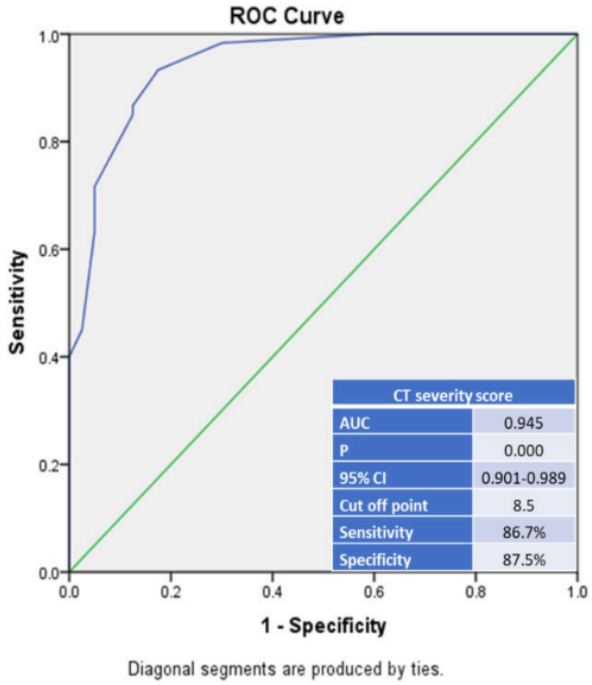


**FIGURE 1:** ROC curve for CT chest total severity score sensitivity and specificity to predict mortality in patients with renal impairment with COVID-19 infection.