



**Short Scientific report on the implementation of the project
PN-III-P4-ID-PCE-2020-2393 (contract no. 204PCE/2021) entitled
“ Long term Cardio-Vascular risk assesment in CKD patients following SARS-COV-2
disease – CARDIO SCARS IN CKD”, Phase 1-2021**

Project Code: PN-III-P4-ID-PCE-2020-2393

Project manager: Prof. Univ. Dr. Adrian C. Covic

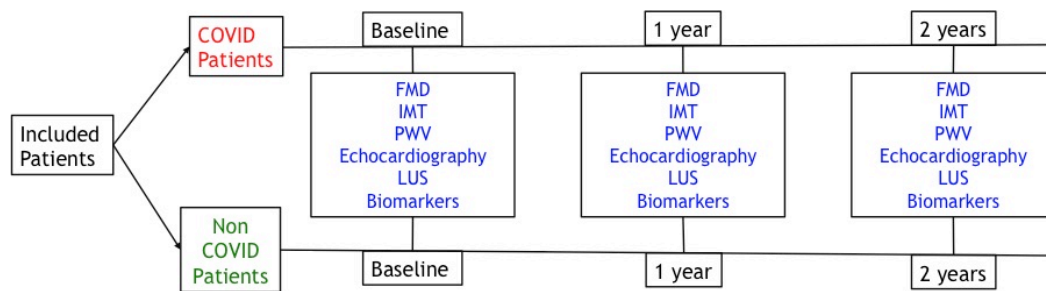
Host institution: Grigore T. Popa University of Medicine and Pharmacy of Iași

Phase-2021. Study initiation. Acquisitions. Patients inclusion. Clinical and biological evaluation. FMD, PWV, IMT, BIS analysis. Cardiac and lung echography.

The coronavirus disease 2019 (COVID-19) caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) produced a pandemic on March 2020 by affecting more than 6.8 million people with more than 5.8 % deaths. SARS-CoV-2 infection is produced by binding to angiotensin-converting enzyme, which among other sites is highly expressed in the endothelial cells of the blood vessels, pericytes and the heart, as well as in renal podocytes and proximal tubular epithelial cells. SARS-COV-2 and cardiovascular disease (CVD) are interconnected by risk factors association with an increased incidence of the disease and by determining de novo cardiac complications. At the same time, COVID-19 disease can lead to acute kidney injury directly, or due to sepsis, multi-organ failure and shock. Therefore, the preexistence of both CVD and chronic kidney disease (CKD) is associated with a higher risk of severe disease and worse prognosis. Taking all this into account, the main aim of study is to holistically assess the CV risk in a CKD population, following COVID-19 SARS-CoV-2 infection, with focus on the endothelial dysfunction as compared to a control group of matched CKD patients, by using clinical evaluation, flow-mediated dilatation, carotid-femoral pulse wave velocity, intima-media thickness, echocardiographic parameters, lung ultrasound, bioimpedance spectroscopy and a series of novel biomarkers, in order to determine the long-term impact of this disease on CV and renal outcomes.

CARDIO SCARS IN CKD project activities are integrated in a coherent and cursive methodology. All the activities and work packages (WP) assemble together towards the results of the project.

This study will include all patients admitted to the *Dr. C. I. Parhon* Hospital of Iasi and will follow the below flow-chart.



Performed activities:

1.1. Approval of the Grigore T. Popa University of Medicine and Pharmacy of Iași Ethical Committee: no. 110/2021.

1.2. Patients inclusion

Study protocol according to ClinicalTrials.gov Identifier: NCT05125913: <https://clinicaltrials.gov/ct2/show/NCT05125913?term=NCT05125913&draw=2&rank=1#contacts>

1.3. Clinical and biological evaluation.

At baseline, defined as T0, all included patients have a complete clinical and paraclinical evaluation. At each evaluation, serum samples are collected and stored at -80°C for future biomarker analysis.

1.4. FMD, PWV, IMT, BIS analysis at T0 for all included patients

1.5. Cardiac and lung echography.

✚ Dissemination and exploitation plan:

- **Clinical Trial:** ClinicalTrials.gov Identifier: NCT05125913

- **Publications ISI:**

- Tanasa, A., Tapoi, L., Ureche, C., Sascau, R., Statescu, C., Covic, A. Left atrial strain: A novel “biomarker” for chronic kidney disease patients? Echocardiography 2021,1–6. <https://doi.org/10.1111/echo.15259>
- Kanbay, M., Tapoi, L., Ureche, C. et al. Effect of sodium–glucose cotransporter 2 inhibitors on hemoglobin and hematocrit levels in type 2 diabetes: a systematic review and meta-analysis. Int Urol Nephrol 2021. <https://doi.org/10.1007/s11255-021-02943-2>
- Tanasa, A., Burlacu, A., Popa, I.V., Covic, A. Right Ventricular Functionality Following Hemodialysis Initiation in End-Stage Kidney Disease – A Single-Center, Prospective, Cohort Study. Medicina 2021, 57, 704. <https://doi.org/10.3390/medicina57070704>
- Burlacu, A., Tinica, G., Brinza, C., Crisan-Dabija, R., Popa, I.V., Covic, A. Safety and Efficacy of Minimum- or Zero-Contrast IVUS–Guided Percutaneous Coronary Interventions in Chronic Kidney Disease Patients: A Systematic Review. J. Clin. Med.2021, 10, 1996. <https://doi.org/10.3390/jcm10091996>

- **Conferences:**

- Oral presentation at Congresul Național al Societății Române de Nefrologie, 7-9 October 2021, Iasi, Romania;
- Oral presentation at Zilelor Cardiologice „Prof. Dr. George I. M. Georgescu”, 27-30 October 2021, Iasi, Romania.