

CARDIORENAL SYNDROME AND CELLULAR THERAPEUTIC PERSPECTIVES: RISK FACTOR IDENTIFICATION FOR TARGETED INTERVENTIONS

Tonofa Maria¹, Purteanu Lilia¹, Benescu Irina¹, Cozma Octavian², Grib Livi¹

¹Discipline of Cardiology, Department of Internal Medicine, *Nicolae Testemitanu* State University of Medicine and Pharmacy, Chisinau, Republic of Moldova.

²Department of Biochemistry and Clinical Biochemistry, *Nicolae Testemitanu* State University of Medicine and Pharmacy, Chisinau, Republic of Moldova.

Introduction. Cardiorenal syndrome (CRS) is a complex pathological condition that highlights the bidirectional relationship between heart failure and chronic kidney disease. This interdependence is driven by multiple pathophysiological mechanisms, including the activation of the renin-angiotensin-aldosterone system, oxidative stress, and chronic inflammation. Cardiorenal syndrome (CRS) is associated with increased mortality and morbidity, making the identification of risk factors essential for effective prevention and management.

Objective. This study aims to identify and classify the risk factors associated with cardiorenal syndrome (CRS) to support the early identification of vulnerable patients and contribute to optimizing prevention and treatment strategies.

Materials and Methods. This prospective-retrospective study included 60 patients diagnosed with cardiorenal syndrome, treated between 2022 and 2024 at *Sfânta Treime* Municipal Hospital. The results were analyzed using statistical methods and compared with data from contemporary literature.

Results. Data analysis identified both traditional and non-traditional risk factors. Among the non-modifiable traditional risk factors, male sex predominated (60% men vs. 40% women), with a ratio of 1.5:1 and a mean age of 70.42 ± 1.28 years. The prevalence of modifiable risk factors was as follows: hypertension (96%), ischemic heart disease (80%), cerebrovascular disease (66%), obesity (57%), diabetes mellitus (55%), anemia (37%), dyslipidemia (33%), history of myocardial infarction (32%), and history of stroke (24%). Our study highlights the high prevalence of hypertension (96%) and ischemic heart disease (80%) in patients with cardiorenal syndrome, emphasizing the significant role of these factors in disease progression. Early identification and optimal management of modifiable risk factors such as obesity (57%) and diabetes mellitus (55%) could contribute to improved patient outcomes.

Conclusions. This study underscores the importance of early identification of major risk factors in CRS. An integrated management approach combining pharmacological treatment and lifestyle modifications can significantly reduce disease progression and associated complications. Our findings suggest the necessity of national screening programs and continuous medical education to improve the prognosis and quality of life of patients with CRS.

Keywords: cardiorenal syndrome, risk factors, heart failure, chronic kidney disease.