

Special Issue on  
**The Cardiorenal Syndromes-Bidirectional  
 Pathophysiology of the Cardiovascular System and the  
 Kidney**

# CALL FOR PAPERS

Cardiovascular disease is the main cause of death in patients with chronic kidney disease (CKD), in which cardiovascular death is a more likely outcome than progression to ESRD. Although numerous studies show an association between decreased kidney function and cardiovascular disease and mortality, mechanisms underlying this association are incompletely understood. This increase is not only related to a higher incidence of “classical” cardiovascular risk factors in the renal patient, but also related to the presence of specific factors related to CKD. Pathogenesis includes both functional and structural alterations in the CV system, increasing the incidence of several clinical CV syndromes, including ischemic heart disease, heart failure, and sudden cardiac arrest. Furthermore, renal function is also affected by heart failure and impaired renal function is an important independent risk factor for all-cause mortality in patients with heart failure. Therefore, a bidirectional link between heart and kidney damage exists and has been recently defined as the cardiorenal syndrome.

The cardiorenal syndrome is an acute or chronic dysfunction in one organ that induces acute or chronic dysfunction of the other. Not only both organs but also the network of roads and highways that connect them, the vasculature, is also affected in the cardiorenal syndrome. Thus, when primary cardiac or renal dysfunction develops, the renin-angiotensin-aldosterone system (RAAS), pressure-sensing baroreceptors, cellular signaling, and sympathetic nervous system mechanisms turn from friend to foe, deregulating very precise mechanisms designed to maintain constant blood volume and organ perfusion.

We, thus, invite investigators to contribute with original research articles, as well as review articles, which seek to explore the pathological manifestations, molecular mechanisms, and innovative pharmacological strategies aimed at its prevention/management.

Potential topics include but are not limited to the following:

- ▶ Diagnostic pathways to classify prevalent patients into one specific cardiorenal syndrome subtype
- ▶ Early diagnostic biomarkers
- ▶ Role of ultrafiltration or aquapheresis in the treatment of patients with cardiorenal syndrome
- ▶ Renal consequences of acute cardiac dysfunction. Alterations in renal blood flow and tubuloglomerular feedback
- ▶ Cardiovascular repercussions of acute renal disease. Hypertension and volume expansion effects in cardiac function
- ▶ New molecules originated in renal or cardiac acute disease with effects in heart or kidney functions
- ▶ Role of the renin-angiotensin-aldosterone system in the cardiorenal syndrome
- ▶ The sympathetic nervous system in the cardiorenal syndrome
- ▶ Role of increased venous pressure in the pathophysiology of the cardiorenal syndrome
- ▶ Cardiac and renal end-organ damage in systemic disease
- ▶ Therapies with Vasopressin receptors antagonist and adenosine A1 receptor antagonist in cardiorenal syndrome
- ▶ New inflammatory markers affecting cardiac and renal function
- ▶ New insights in vascular disease in CKD. Vascular calcification and accelerated atherosclerosis
- ▶ Bone is one of the keys to understand CR syndrome

#### Lead Guest Editor

Jose M. Valdivielso, Institut de Recerca Biomedica de Lleida (IRBLLEIDA), Lleida, Spain  
*valdivielso@medicina.udl.cat*

#### Guest Editors

Mario Cozzolino, University of Milan, Milan, Italy  
*mario.cozzolino@unimi.it*

Pablo Ureña, Clinique du Landy, Saint Ouen, France  
*urena.pablo@wanadoo.fr*

Neil Docherty, University College Dublin, Dublin, Ireland  
*neil.docherty@ucd.ie*

Marta R. Ortega, Universidad Autónoma de Madrid, Madrid, Spain  
*marta.ruiz.ortega@uam.es*

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