

Special Issue on **Novel Approaches for Diagnosing and Management of Cardiovascular Disorders Mediated by Oxidative Stress**

CALL FOR PAPERS

Oxidative stress results from an imbalance between prooxidant formation and neutralization. Reactive oxygen species (ROS) are toxic, highly reactive, and unstable compounds formed during a variety of physiological and pathological biochemical reactions. ROS are produced in all viable cells and strong evidence suggests an important role of ROS in the development and progression of cardiovascular disease. Nevertheless, the precise mechanisms contributing to the heart injury due to increased oxidative stress are still under investigation. Recent experimental studies suggest that ROS plays a causal role in the development of systolic dysfunction following myocardial infarction (MI) and the brain ischemia-reperfusion injury in the course of stroke and in pathogenesis of some forms of pulmonary arterial hypertension.

The decreased bioavailability of nitric oxide (NO), as well as increased oxidative stress, plays a crucial role in contributing to the decrease of endothelial vasodilative properties. According to several experimental studies increased peroxynitrite (ONOO⁻) formation correlates with the development of neurological deficits following ischemic stroke and the cardiac ischemia-reperfusion injury in the course of coronary artery disease. The peroxynitrite-dependent modifications of proteins have been shown in many cardiovascular disorders; however its molecular consequences still remain unknown.

We invite researchers to contribute original research articles as well as review papers that will enhance the ongoing efforts to understand the interplay between oxidative stress at the molecular level and the clinical manifestation of cardiovascular disease. We strongly encourage new submissions that involve basic and translational studies defining the contribution and the potential interaction between oxidative stress and relevant changes in cardiovascular system.

Potential topics include but are not limited to the following:

- ▶ Novel methods for assessing oxidative stress and endothelial function in human
- ▶ Inflammation and oxidative stress in the onset of organ damage in cardiovascular disorders
- ▶ New biomarkers and novel therapeutic targets for management of pulmonary hypertension, ischemic stroke, cardiac ischemia-reperfusion injury, acute kidney injury, and acute lung injury
- ▶ The role of endothelium in particular forms of pulmonary hypertension, stroke, cardiac ischemia/reperfusion-induced injury, acute kidney injury, and lung injury
- ▶ Endothelial function in stroke and other severe neurological disorders, modulating role of oxidative stress and autonomic nervous system
- ▶ Mechanical and biophysical stimuli modulating oxidative stress and endothelial function in vascular disorders
- ▶ Oxidative stress and nitric oxide metabolism in blood cells and platelets under physiological and pathological conditions

Authors can submit their manuscripts through the Manuscript Tracking System at <https://mts.hindawi.com/submit/journals/omcl/nddm/>.

Papers are published upon acceptance, regardless of the Special Issue publication date.

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Submission Deadline

Friday, 12 July 2019

Publication Date

November 2019