

Special Issue on Regulatory Mechanisms of Estrogen on Vascular Ageing

CALL FOR PAPERS

Vascular ageing is associated with structural and functional changes of the vascular wall, including endothelial dysfunction, arterial stiffening and remodeling, and impaired angiogenesis, and acts as a major risk factor in the development of cardiovascular disease (CVD). In women, cardiovascular risk is similar for older men and women, but lower in women during their fertile years. This age- and sex-related difference is not completely understood and there is controversy surrounding the clinical use of estradiol as a therapeutic agent for cardiovascular disease in women. Experimental and some observational clinical studies have attributed most of the protective vascular effects of estrogen to its modulatory action on vascular system that acts through its receptors ER, ER, and G protein-coupled estrogen receptor (GPER). However, clinical trials such as the Women's Health Initiative (WHI) that enrolled older women than the observational studies reported an increase in CVD events in women treated with menopausal hormone therapy compared with those treated with placebo. Mechanisms underlying estradiol vascular function include anti-inflammatory and antioxidative effects and epigenetic modifications, and these estradiol signaling pathways could be altered with ageing. In fact, a great burden of oxidative stress is seen during ageing and menopause which can contribute to vascular dysfunction. That way, oxidative stress together with the inflammatory activation of the vascular endothelium induces a wide range of local and systemic responses, such as the expression of adhesion molecules, the production of chemotactic factors, and free radicals that could regulate the vascular effects of estradiol. Thus, the vasoprotective effects seen in premenopausal women could be converted to deleterious effects in postmenopausal women.

In this special issue, we invite the researchers to contribute reviews as well as original research articles that will advance our understanding on the regulatory mechanisms of estrogen on vascular system that could interact with ageing mechanisms addressed during menopause transition, especially with those related to oxidative stress. We are focused on articles describing mechanisms which could be pivotal for the development of novel therapeutic strategies to treat cardiovascular diseases in woman.

Potential topics include but are not limited to the following:

- ▶ Epigenetic regulation of estradiol signaling in ageing
- ▶ Role of inflammatory pathways on vascular effects of estradiol in ageing
- ▶ Role of oxidative stress on vascular effects of estradiol in ageing
- ▶ Molecular mechanisms and current clinical trials of phytoestrogens on vascular function
- ▶ Animal models of experimental menopause
- ▶ Role of physical activity in preserving vascular health in women
- ▶ Clinical use of estradiol as primary prevention of cardiovascular disease in women

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

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

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