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# 2<sup>nd</sup> WORLD HEART CONGRESS

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## Carola Y Forster

University of Wurzburg, Germany





## Estrogen receptor-beta activation: A novel approach to prevent ischemic brain damage as a comorbidity of heart failure

In recent years, greater attention has been placed on the impact of biological sex and hormonal status in regards to a predisposition for Cardiovascular Disease (CVD) and response to therapy. Women generally have a lower risk for developing CVD compared to men of similar age but this protection is lost during menopause, suggesting the importance of sex steroid hormone signaling. Although estrogens are viewed as female sex hormones and androgens are viewed as male sex hormones, estrogen and androgen signaling govern a multitude of physiological processes in both women and men. Our biomedical research thus focuses on the protective role of estrogen in the vasculature and pathophysiology of cardiovascular disorders of public health significance, such as heart failure, stress-induced cardiomyopathy (e.g. Takotsubo syndrome) and ischemic stroke as a frequent comorbidity. We will present a set of experiments implementing estrogen receptor beta mediated pathways of cardio-protection and pilot experiments relating estrogen receptor status, endothelial dysfunction and stroke susceptibility potentially contributing to the pathophysiology of Takotsubo syndrome.

#### **Biography**

Carola Y Forster has a convincing track record in neurophysiology with a strong focus on the dysfunctions of the Blood-Brain Barrier (BBB). A significant aspect of her research is related to regulation of gene expression at the BBB, specifically by non-coding RNA, particular microRNA, to offer pharmacological solutions to the observed BBB alterations. For this, she systematically studies the mechanisms from gene regulation, through transcription, to protein degradation and cellular morphology, linking basic science with clinical aspects. After years of experience in research, evaluation, teaching and administration both in hospital and education institutions, she developed different in vitro and in vivo models of cerebrovascular disease and established recently a division of computational model to further strengthen this area of research.

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Michiaki Nagai has completed his graduation from the Jichi Medical University School of Medicine and has been engaged in the cardiovascular medicine. Using volumetric analysis in MR SPGR imaging, he has been investigating the fields for target hypertensive organ damages including the relationships among hypertension, blood pressure variability, brain atrophy, cognitive impairment and central autonomic nervous system including the insular cortex. He was engaged in the Interventional Cardiology at Hiroshima City Asa Hospital as the Vice Director. He won the Japanese Society of Hypertension Award in the International Society of Hypertension 2006, the Young Investigator's Award in the 8th Japanese Neurocardiology Workshop 2007 and Young Scientist Award in the second annual scientific forum of clinical hypertension of the Japanese Society of Hypertension 2013.

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