University of Zurich[UZH]

Institute for Regenerative Medicine (IREM)

Colloquium

Clinical Colloquium Regenerative Medicine

Thursday, October 31 2019 at 1–2pm,
Institute for Regenerative Medicine (IREM),
University of Zurich, Wagistrasse 12,
WAD-904 (Founders Lab), 8952 Schlieren

Prof. Vera Regitz-Zagrosek

Gender in Medicine, Charité University Medicine, Berlin, Germany, and Anna Fischer Dueckelmann visiting professor, University of Zurich, Switzerland

Sex differences in cardiovascular cells - relevance for translational medicine

Cardiovascular disease (CVD) has different manifestations in women and men and in male and female rodents. Females develop more physiological myocardial hypertrophy than males with better metabolic adaptation. Fibrosis, a hallmark of pathological myocardial hypertrophy, is more prominent in males than in females in mice and men. In animal and cell culture models of hemodynamic and neurohormonal stress and in engineered heart tissue, the interaction of the stressors with sex and sex hormone effects is obvious. Oestrogen is protective in females in most models, but harmful in males in some conditions. Estrogen receptor alpha and beta activation have different effects on fibrosis and metabolism in females and males. Female cells and animals under stress maintain energy metabolism better than males. Outcome of stem cell therapy for myocardial infarction may depend on sex. Women with aortic stenosis develop less eccentric myocardial hypertrophy with less fibrosis compared to men and this is associated with better clinical outcomes.

Adaptation to cardiovascular stress and end organ damage are sex specific and sex specific approaches to treatment may lead to further benefit.

Organiser: Prof. Dr. Dr. Simon P. Hoerstrup / Prof. Dr. Roger M. Nitsch
Execution/Chair: Dr. Steffen M. Zeisberger / Dr. Christian Tackenberg
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