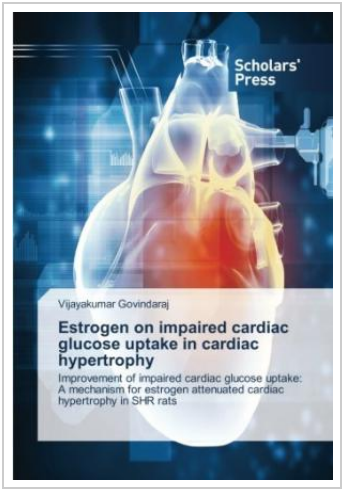

Estrogen on impaired cardiac glucose uptake in cardiac hypertrophy

By Govindaraj, Vijayakumar

Condition: New. Publisher/Verlag: Scholar's Press | Improvement of impaired cardiac glucose uptake: A mechanism for estrogen attenuated cardiac hypertrophy in SHR rats | The aim of the study was to determine whether estrogen improves the impaired cardiac glucose uptake in cardiac hypertrophy which could provide a mechanism to explain the prevention of cardiac hypertrophy by estrogen using spontaneously hypertensive rats (SHR). To examine this ovariectomized (OVX) and ovariectomized estradiol-implanted (OVX-E2) SHR rats were analyzed. At the end of the treatment the degree of cardiac hypertrohy, serum hormone levels, cardiac glucose uptake by FDG-PET and GLUT4 localization and expression, and cardiac hexokinase activity were analyzed. Results revealed that estrogen substitution inhibits uterine atrophy and cardiac hypertrophy in OVX+E2 group compared to OVX. PET analysis showed a significant increase in myocardial glucose uptake in OVX+E2 compared to OVX group. Confocal microscopy and western blotting demonstrated higher GLUT4 translocation on plasma membrane in E2 treated rat heart. Micro-array gene expression analysis showed differentially expressed genes that are involved in the mTOR signaling pathway which is known to be activated during cardiac hypertrophy. | Format: Paperback | Language/Sprache: english | 84 pp.

Reviews

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