



Effect of rosiglitazone on coronary angiogenesis in diabetic and control rats

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Background and Aims: Peroxisome proliferator-activated receptors (PPARs) are ligand-activated transcription factors of nuclear receptor superfamily, consisting of three subtypes: PPAR α , γ , β/δ . Clinical evidence suggests that PPARs may be involved in regulating angiogenesis. In this study, we examined the hypothesis that whether activation of PPAR γ by Rosiglitazone, a PPAR γ agonist, can alter coronary angiogenesis in diabetic and control rats.

Methods: Twenty four male rats were randomly divided into four groups as follows: group1: control rats received vehicle; group2: control rats received rosiglitazone (8mg/kg/day) by gavage every day; group3: diabetic rats received vehicle; group4: diabetic rats received rosiglitazone (8mg/kg/day) by gavage everyday. All rats were sacrificed after 21 days and their hearts muscles were harvested for immunohistochemistry.

Findings: The mean capillary density in control rats was higher than diabetic rats ($p=0.08$). Rosiglitazone treatment could not change capillary density of the heart in diabetic rats (121.71 ± 13.32 versus $136.62\pm 7.02/\text{mm}^2$) and nondiabetic rats (153.78 ± 11.08 versus $135.96\pm 4.3/\text{mm}^2$).

Conclusions: Our findings demonstrate that diabetes is associated with reduced capillary density in the heart and PPAR γ activation by rosiglitazone could not alter angiogenesis in diabetic and non-diabetic rats.

Keywords: Angiogenesis; Diabetes; PPAR γ ; Rosiglitazone