Keywords: Bladder cancer; cryopreservation; RNA sequencing; storage time

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AB208. Antioxidant icariside II combined with insulin restores erectile function in streptozotocin-induced type 1 diabetic rats

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Objective: Erectile dysfunction (ED) worsens in patients with diabetes mellitus (DM) despite good control of blood glucose level with insulin. Recent studies imply that diabetic vascular stresses (e.g., oxidative stress) persist in spite of glucose normalization, which is defined as metabolic memory. Studies suggest that the interaction between advanced glycation end products (AGEs) and their receptor (RAGE) mediates the development of metabolic memory. To investigate the effects of the antioxidant icariside II plus insulin on erectile function in streptozotocin (STZ) -induced type 1 diabetic rats.

Methods: Fifty 8-week-old Sprague-Dawley rats were randomly distributed into five groups: normal control, diabetic, insulin-treated diabetic, icariside II-treated diabetic, and insulin plus icariside II-treated diabetic. Diabetes was induced by a single intraperitoneal injection of STZ. Eight weeks after induction of diabetes, icariside II was administered by gastric lavage once a day (5 mg/kg) for 6 weeks; and 2-6 units of intermediate-acting insulin were given to maintain normal glycemia for 6 weeks. The main outcome measures were the ratio of intracavernous pressure (ICP) to mean arterial pressure (MAP); histology of penile endothelial cells and smooth muscle cells; neural nitric oxide synthase, AGEs and RAGE expression; malondialdehyde concentration; superoxide dismutase activity; and apoptosis index.

Results: Diabetic rats demonstrated a significantly lower ICP/MAP ratio, reduced penile endothelial cells, reduced smooth muscle cells, increased AGEs and RAGE, and increased apoptosis. Insulin and icariside II monotherapy partially restored erectile function and histological changes. However, the combination therapy group showed significantly better erectile parameters, cytological components and biochemistry, similar to those in the normal control group.

Conclusions: These results suggest that, although insulin can effectively control glycemic levels, it does not completely alter the pathological changes in erectile tissues. Better efficacy could be expected with tight glycemic control plus the antioxidant icariside II. The proposed combination therapy might have the potential to eliminate metabolic memory by down-regulating the AGEs-RAGE oxidative stress axis.

Keywords: Diabetes mellitus (DM); erectile dysfunction (ED); icariside II

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AB209. Prophylactic protective effects and its potential mechanisms of icariside II on streptozotocin induced spermatogenic dysfunction

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