Effects of catecholamines on blood pressure in the femoral bone marrow cavity in ovariectomized rats

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Abstract:
Menopausal women display changes in the osseous tissue (osteoporosis, pathologic fractures) and disorders in the function of cardiovascular system (hypertension, cardiovascular disease, arteriosclerosis, calcification). Additionally, interdependence was observed between the loss of osseous tissue and disordered circulation, but the mechanism of the interdependence has never been fully recognized. In order to clarify this problem, the present study concentrated on the effect of catecholamines on blood pressure in the femoral bone marrow cavity in ovariectomized rats. The Fical-Arlet method was used to examine blood pressure in marrow cavity. Norepinephrine, epinephrine, isoprenaline as well as adrenoceptor antagonists (phenolamine and propranolol) were administered to the controls and the ovariectomized rats. The examinations demonstrated that ovariectomized rats displayed decreased blood pressure in the marrow cavity. In addition, an intensified effect of catecholamines on blood pressure in the marrow cavity of osteoporotic bone in ovariectomized rats was observed.

Key words: blood pressure, bone, catecholamines, osteoporosis, ovariectomy, rat