
Purpose: To describe a way of producing a model of experimentally-induced atherosclerosis with the syndrome X in rabbits and refer to its usefulness in preventing and curing patients with the atherosclerotic diseases. Materials and methods: 28-month-old male Japanese white rabbits, weighing 4Kg, were fed an atherosclerotic diet for 5 months, while receiving daily administration of epinephrine. Lipids, glucose, and insulin in blood, pulse wave velocity (PWV), and blood pressure were measured monthly. Contents of aortic medial connective tissue components (AMCTCs) including smooth muscle cells (SMC), elastin, etc., were histochemically quantitated by microscopic photometry method. Results: In the atherosclerotic diet-fed rabbits, the levels of blood lipids, glucose, and insulin were high or tended to be high and PWV also became increased. Decrease in elastin associated with the deposition of the pachychromatic AMCTCs and degenerated SMC in the media was a characteristic hallmark of this atherosclerotic lesion. The model could be a good tool for a direct way to know anti-atherosclerotic effect of drugs used for patients with hypertension, glucose intolerance, hyperlipemia, and obesity.