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EFFECTS OF PHARMACOLOGICAL THERAPIES ON REGRESSION OF CORONARY PLAQUE IN PATIENTS WITH ISCHEMIC HEART DISEASE

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Abstract

Progression of coronary plaque volume is associated with higher incidence of cardiac adverse events. In contrast, it is considered that coronary plaque volume regression reduces incidence of adverse events.

New modalities can clearly show not only coronary plaque volume but coronary plaque components. Recent intravascular ultrasound (IVUS) systems such as vertical histology (VH)-IVUS, integrated backscatter (IB)-IVUS and near infrared spectroscopy (NIRS)-IVUS can be also a sensitive tool to detect coronary vulnerable plaques. Prior studies using those imaging have suggested that there is a close relationship among lifestyle diseases including diabetes, dyslipidemia, hypertension and chronic kidney disease and coronary plaque volume. Moreover, lipid rich and vulnerable coronary plaques are more frequently seen in patients with lifestyle diseases. The finding might explain why such subjects have an increasing risk of cardiovascular disease.

It is well known that lipid-lowering therapy, anti-hypertensive therapy, and some specified antidiabetic therapies improve the clinical outcome in patients with coronary artery disease. Some mechanisms can be explained for the phenomena. One possible mechanism may be that coronary plaques can be reduced in volume and be stabilized by such therapies. Stabilizing coronary plaque may inhibit onset of acute coronary syndrome. In many studies, treatments with statins have been associated with reduction in both coronary total plaque volume and lipid volume. In addition, some antihypertensive medications such as RAS inhibitors significantly reduce coronary plaque volume.

In my presentation, I'd like to show our IB-IVUS data on relationships between coronary plaque composition and lifestyle diseases. Also, effects of pharmacological therapy on reducing and stabilizing coronary plaque will be discussed.

Keywords

coronary plaque, vulnerable plaque, lifestyle diseases, pharmacology, intravascular ultrasound