



Atherosclerosis and Psychiatric Diseases

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ATHEROSCLEROSIS

Atherosclerosis is the consequence of an inflammatory response to injury to the vascular endothelial surface which progresses to manifest clinically with age (1). The main risk factors leading to progression of atherosclerotic plaque are hypertension, diabetes, smoking, low-level high-density lipoprotein (HDL) cholesterol and high-level low-density lipoprotein (LDL) cholesterol (1). Other factors known to contribute are psychosocial stress, physical inactivity, chest radiation therapy, chronic infection, and concomitant inflammatory diseases such as lupus (1). Atherosclerosis affects medium and large-sized arteries and leads to both coronary artery disease (CAD) and cerebrovascular disease such as vascular dementia and ischemic stroke (2). Carotid intima-media thickness (CIMT), showing hypertrophy of both the intima and media layers of the arterial wall, provides the first demonstration of atherosclerosis (3). Increasing CIMT is sensitive to detecting early subclinical atherosclerosis and is practically an independent predictor for ischemic stroke and CAD (4).

Psychiatric disorders are common in people with CAD as a complication or comorbid condition. Recently, atherosclerosis has attracted attention as a potential mechanism clarifying the link between psychiatric disorders and CAD.

ATHEROSCLEROSIS AND DEPRESSION

There are several mechanisms suggested to explain the bidirectional relationship between depression and atherosclerosis. The sequence of mechanisms connect-

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CAD mortality is almost 2 to 3 fold in schizophrenia (42-44). While there is an increased risk of CHF and stroke for schizophrenia, there are studies that do not detect an increased risk of CAD (45, 46). Moreover, it is obvious that second-generation antipsychotics might lead to metabolic side effects and dyslipidemia (47). Relatively stable lipid levels during longitudinal testing in patients with schizoaffective disorders and schizophrenia were suggested to be likely related with the core disease mechanisms in addition to antipsychotic medication (48). The interaction between dyslipidemia and chronic inflammation are hallmarks of atherosclerotic progression. Chronically elevated CRP levels have been repeatedly associated with persistent autoinflammatory processes and an increased risk of CAD in psychotic patients (49). Increased neutrophil effector functions and circulating levels of inflammatory neutrophil effector peptides have been linked to schizophrenia pathogenesis and may provide a common factor between atherosclerosis and inflammation (50,51).

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