

A Prospective View of Therapeutic Strategy of Atherosclerosis in Cardiovascular Diseases

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Letter to Editor

Atherosclerosis is chronic autoimmune inflammation; combining with accumulation of abnormal lipid metabolites taking place in tissue of vessels wall. In the past two decades; Dr. Wang Yongjun's cerebrovascular diseases research team has been studying for reducing morbidity and mortality of cardiovascular diseases caused by atherosclerosis through clinical research on stroke. This team studied the correlation between atherosclerosis and acute outbreak of stroke at the first time in China with imagine technology (CT and TCD) as early as in 1995 [1]. Then the team accessed and compared the four stroke evaluation scales that generally used in Europe; USA; Japan and China with acute stroke inpatients; which was the first time to bring the bridge of clinical research about stroke between China and the rest of world [2]. Knowing the significant of rehabilitation in outcome of stroke; Beijing Tiantan Hospital built stroke units setting for inpatients to satisfy the world standard of clinical research of stroke; and performed the therapeutic effects and prospective study of intervention and antiplatelet agents (Clopidogrel combining with Aspirin) application to atherosclerosis and stroke patients [3]; which provided the fundamental data for the guideline of primary and secondary prevention of cerebrovascular diseases in China. According to their achievement; an innovative system; Chinese Ischemic Stroke Subclassification (CISS) was created and spreadingly employed within hundreds hospitals offering standard and accurate classification for clinical information of stroke in China [4]. ACURE Biotechnology; INC.; backed with extensive basic and translational research in neuroscience; lipids metabolism; cell microenvironment; angiogenesis and infectious diseases; holds 5 patents in therapeutic and preventive strategies for vascular diseases. A novel gene with same N-terminal motif to G-couple proteins was originally discovered by this company's founder as early as in 2001; had been demonstrated that it play important role in immune and brain associating with lipid rafts [5]. The founder later discovered that the intracellular accumulation of ceramide; the original backbone for most lipids; causes mitochondria dysfunction and leads to severe defect of development of cardiovascular in a Ceramide Transfer Protein (CERT) mutant mouse model [6]. Recently the company established an animal model studying the association between secretion of cytokines (IL17; VEGF) in infectious diseases and vascularization [7]. Thereby a hypothesize that mitochondria dysfunction of smooth muscle cells in vessels wall caused by hypertension; diabetes; high fat or glucose diets; viruses and bacteria infection; and diseases lowering blood oxygen; aging and degeneration diseases; produces abnormal lipids metabolites; which cause the local acute; then process to chronic inflammation;

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cell death and calcification--the pathological changes of atherosclerosis. Here address to this hypothesis; we summarize a comprehensive therapeutic strategy in atherosclerosis for our collaboration: Evaluating; monitoring and controlling the risk factors of stroke in a community system; Establishment of epigenetic gene markers to predict high-risk population of stroke for preventive medicine; Developing and discovering innovative immunotherapy and drugs to remove or stabilize atherosclerosis lesions; discovering new drugs to improve the formation of collateral circulation in brain after stroke; Combination of acute care; rehabilitation and traditional Chinese medicine to improve the outcome of stroke patients.

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