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Short Review

A short Review based on the Article Entitled "Exploring the effect of Radix Bupleuri (Bupleurum chinense DC) on Non-alcoholic Fatty Liver Disease Based on Network Pharmacology

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This article uses TCMSP database, DisGenet database, STRING software DAVID database and GO functional enrichment research database to verify that Bupleurum may use Fluid shear stress and atherosclerosis, Cancer, AGE-RAGE, TNF signaling pathway to regulate IL6, TNF and PTGS2 and other targets, and reduce the deposition of extracellular matrix to improve the therapeutic effect of non-alcoholic fatty liver disease. The active ingredient of traditional Chinese medicine, Radix Bupleuri kaempferol may also play a major role.

Overview of Research Purpose and Background

Nonalcoholic Fatty Liver Disease (NAFLD) is a major global public health problem in the 21st century. It is a metabolic stress-induced liver injury closely related to insulin resistance and genetic susceptibility [1,2]. About 30% of NAFLD patients can develop steatohepatitis (NASH), about 20% of NASH patients will further develop fatty liver fibrosis, nearly 25% of NASH patients will develop cirrhosis, and 10% to 15% of NASH patients will develop liver cirrhosis. Patients with cirrhosis further develop liver cancer, marking an irreversible liver function change [3,4]. The "multi-hit" theory believes that factors such as insulin resistance, mitochondrial dysfunction, gut microbiota structure, bile acid and fatty acid metabolism disorders are involved in NAFLD disease progression. It is estimated that 25.24% of the world's population suffers from NAFLD, especially in the Middle East and the Middle East. South America has the highest prevalence rate, and my country's overall prevalence rate is as high as 29.88%; one in every three people suffers from the disease, and the proportion is increasing yearly [5,6]. Currently, the methods of modern medical treatment of NAFLD are mainly symptomatic treatment, changing unhealthy lifestyle, aerobic exercise, etc., and there is a lack of targeted and effective drugs. In case of liver damage and elevated blood lipids, lipid-lowering and hepatoprotective drugs should be used. And traditional Chinese medicine has achieved a noticeable curative effect in the treatment of NAFLD, suggesting that traditional Chinese medicine has an extensive application prospect in the treatment of the disease.

Problem Formulation and Summary Outlook Evaluation

Since our team found in recent studies that the traditional Chinese medicine *Radix Bupleuri* has the effect of improving liver function, a series of studies were conducted to verify the mechanism and impact of *Bupleurum* on non-alcoholic fatty liver disease. Objective law of action, clarifying drug action and mechanism of action, improving drug efficacy, and providing a factual basis for the prevention and treatment of adverse reactions. But there are real problems in practice. First, the effective chemical composition of traditional Chinese medicine is complex and has not been fully grasped. Second, the specifically targeted mechanism of action cannot be determined.

Furthermore, there is a lack of toxicological test research on traditional Chinese medicine, and its modernization research progress is invisibly limited. Therefore, deepening the combination of modern technology and traditional Chinese medicine, in-depth exploration of the active ingredients of traditional Chinese medicine, mechanism of action, toxicological research, and research on specific action targets will be the basis for our future treatment of NAFLD and provide more accurate and effective treatment methods and methods for traditional Chinese medicine treatment. In the future, our team will conduct research and verification through cell experiments, animal experiments, clinical drug experiments, etc., to determine the specific mechanism and effect of *Radix Bupleuri* on NAFLD so as to achieve the goal of alleviating or even treating NAFLD.

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