Latin American Journal of Pharmacy
(formerly *Acta Farmacéutica Bonaerense*)
Lat. Am. J. Pharm. **42** (5): 1016-23 (2023)

Received: December 7, 2022
Accepted: January 9, 2023

Effects of Chinese Medicine Soufeng Qutan on NLRP3 Inflammasome in Atherosclerotic ApoE-Knockout mice

Bing ZHAO [1] &, Lihong GONG [2] *

[1] *Cardiovascular Medicine, Liaoning University of Traditional Chinese Medicine, 110847 China*

[2] *Cardiovascular Medicine, Liaoning Affiliated Hospital of University of Traditional Chinese Medicine 110032 China*

SUMMARY. **The objective was to observe the effects of Chinese Medicine Soufeng Qutan on NLRP3 inflammasome in unstable atherosclerotic plaques of Apo-E mice. In order to create an atherosclerotic unstable plaque model, six-week-old ApoE mice were fed a high-fat diet for 13 weeks and were then randomly assigned to the model group, Sofeng Qutan low, medium, and high dose group, and atorvastatin group; another 6-week-old C57BL/6J mice were set up as a blank control group. The blank control and model groups were given 0.9% saline gavage. Different doses of Chinese Medicine Soufeng Qutan soup and atorvastatin tablets were given to the Chinese Medicine Soufeng Qutan low, medium, and high dose groups. The atorvastatin group, respectively. 13 weeks later, the mice were executed, and the plaque area was observed by HE staining. TC, TG, LDL-C, and HDL-C were measured by a biochemical auto-analyzer. The expression levels of NLRP3, caspase-1, and ASC were detected by Western blot, and NLRP3, caspase-1, ASC, IL-1β, and IL-18 mRNA were detected by RT-PCR. The expression levels of serum TC, TG, and LDL-C were increased ($p < 0.05$), HDL-C was decreased ($p < 0.05$), and the expression levels of NLRP3, caspase-1, ASC, IL-1β, and IL-18 were increased ($p < 0.05$). The expression levels of serum TC, TG, and LDL-C were decreased ($p < 0.05$), HDL-C was increased ($p < 0.05$), and the expression levels of NLRP3, caspase-1, ASC, IL-1β, and IL-18 were decreased ($p < 0.05$) in the Chinese medicine dose group and atorvastatin group ($p <. 0.05$). Chinese Medicine Soufeng Qutan can inhibit the progression of cellular inflammatory responses and down-regulate the expression of NLRP3, which may be one of the molecular mechanisms of early treatment of atherosclerosis with Soufeng Qutan Chinese medicine.**

RESUMEN. El objetivo fue observar los efectos de la Medicina China Soufeng Qutan sobre el inflamasoma NLRP3 en placas ateroscleróticas inestables de ratones Apo-E. Con el fin de crear un modelo de placa aterosclerótica inestable, se alimentó a ratones ApoE de seis semanas de edad con una dieta rica en grasas durante 13 semanas y luego se asignaron al azar al grupo modelo, el grupo de dosis baja, media y alta de Sofeng Qutan, y atorvastatina. grupo; otros ratones C57BL/6J de 6 semanas de edad se establecieron como grupo de control en blanco. A los grupos de control y modelo en blanco se les administró solución salina al 0,9% por sonda. Se administraron diferentes dosis de Soufeng Qutan de Medicina China y tabletas de atorvastatina a los grupos de dosis baja, media y alta de Soufeng Qutan de Medicina China. El grupo de atorvastatina, respectivamente. 13 semanas más tarde, se ejecutaron los ratones y se observó el área de la placa mediante tinción con HE. TC, TG, LDL-C y HDL-C se midieron mediante un autoanalizador bioquímico. Los niveles de expresión de NLRP3, caspasa-1 y ASC se detectaron mediante Western blot, y los ARNm de NLRP3, caspasa-1, ASC, IL-1β e IL-18 se detectaron mediante RT-PCR. Los niveles de expresión de TC, TG y LDL-C séricos aumentaron ($p < 0,05$), HDL-C disminuyó ($p < 0,05$) y los niveles de expresión de NLRP3, caspasa-1, ASC, IL-1β y IL-18 se incrementaron ($p < 0,05$). Los niveles de expresión de TC, TG y LDL-C séricos disminuyeron ($p < 0,05$), el HDL-C aumentó ($p < 0,05$) y los niveles de expresión de NLRP3, caspasa-1, ASC, IL-1β y La IL-18 disminuyó ($p < 0,05$) en el grupo de dosis de medicina china y en el grupo de atorvastatina ($p <. 0,05$). La medicina china Soufeng Qutan puede inhibir la progresión de las respuestas inflamatorias celulares y regular a la baja la expresión de NLRP3, que puede ser uno de los mecanismos moleculares del tratamiento temprano de la aterosclerosis con la medicina china Soufeng Qutan.

KEY WORDS: atherosclerosis, Chinese medicine Soufeng Qutan, inflammation, NLRP3 inflammasome.

* Author to whom correspondence should be addressed. *E-mails:* 18941638963@outlook.com

ISSN 0326 2383 (printed ed.)
ISSN 2362-3853 (on line ed.)