Latin American Journal of Pharmacy
(formerly *Acta Farmacéutica Bonaerense*)
Lat. Am. J. Pharm. **42** Special issue 1: 7-12 (October 2023)

Received: July 20, 2023
Accepted: September 4, 2023

Tetrandrine Exerts Anti-asthmatic Effect in Mice: Role of Eosinophil Accumulation, Inflammatory Factor Release and Oxidative Stress

Zhaojuan MA [1], Ranran ZHU [2] & Wei LI [3] *

[1] *Department of Pulmonary and Critical Care Medicine, The Second Affiliated Hospital of Zhejiang Chinese Medical University, Hangzhou 310005, China*

[2] *Department of Respiratory and Critical Care Medicine, Wenshang People's Hospital, Jining 272500, China*

[3] *Department of Pulmonary and Critical Care Medicine, The Yancheng Clinical College of Xuzhou Medical University, The First People's Hospital of Yancheng City, Yancheng 224006, China*

SUMMARY. **This study observed the anti-asthmatic effect of tetrandrine in mice and explored the relationship with eosinophil accumulation, inflammatory factor release and oxidative stress. Fifty mice were randomly divided into control, model, 25 mg/kg tetrandrine, 50 mg/kg tetrandrine and 100 mg/kg tetrandrine groups, with 10 mice in each group. The asthma model was established in the latter four groups. From the 14th day of modeling, the mice in latter three groups were given 25, 50 and 100 mg/kg tetrandrine solution by gavage, respectively, for 14 consecutive days. At the end of experiments, compared with model group, in tetrandrine groups the airway hyperresponsiveness was significantly decreased, the serum immunoglobulin G and immunoglobulin E levels were significantly decreased, the bronchoalveolar lavage fluid white blood cell count, eosinophil count, eosinophil percentage and interleukin 1β, interleukin 6 and tumor necrosis factor-α levels were significantly decreased, the lung tissue glutathione peroxidase and superoxide dismutase levels were obviously increased, and the malondialdehyde level was obviously decreased. In conclusion, tetrandrine can effectively reduce the airway hyperresponsiveness of asthmatic mice, which may be related to the inhibition of eosinophil accumulation, inflammatory factor release and oxidative stress.**

RESUMEN. Este estudio observó el efecto antiasmático de la tetrandrina en ratones y exploró la relación con la acumulación de eosinófilos, la liberación de factores inflamatorios y el estrés oxidativo. Cincuenta ratones se dividieron aleatoriamente en grupos de control, modelo, tetrandrina de 25 mg/kg, tetrandrina de 50 mg/kg y tetrandrina de 100 mg/kg, con 10 ratones en cada grupo. El modelo de asma se estableció en los últimos cuatro grupos. A partir del día 14 del modelado, los ratones de los últimos tres grupos recibieron 25, 50 y 100 mg/kg de solución de tetrandrina por sonda, respectivamente, durante 14 días consecutivos. Al final de los experimentos, en comparación con el grupo modelo, en los grupos de tetrandrina la hiperreactividad de las vías respiratorias disminuyó significativamente, los niveles séricos de inmunoglobulina G e inmunoglobulina E disminuyeron significativamente, el recuento de glóbulos blancos en el líquido de lavado broncoalveolar, el recuento de eosinófilos, el porcentaje de eosinófilos y la interleucina 1β. , los niveles de interleucina 6 y factor de necrosis tumoral α disminuyeron significativamente, los niveles de glutatión peroxidasa y superóxido dismutasa en el tejido pulmonar aumentaron obviamente y el nivel de malondialdehído disminuyó obviamente. En conclusión, la tetrandrina puede reducir eficazmente la hiperreactividad de las vías respiratorias de ratones asmáticos, lo que puede estar relacionado con la inhibición de la acumulación de eosinófilos, la liberación de factores inflamatorios y el estrés oxidativo.

KEY WORDS: asthma, inflammatory, mice, oxidative stress, tetrandrine.

* Author to whom correspondence should be addressed. *E-mail:* liweiyc1@163.com

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