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Effects of Xinmailong Injection on PGE_2 and Related Enzymes of Mouse Brain Microvascular Endothelial Cells Stimulated by Interleukin-1

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SUMMARY. **In order to explore the effects of Xinmailong (XML) injection on cerebrovascular diseases (CVDs), the contents of prostaglandin E_2 (PGE_2) and related enzyme of mouse brain microvascular endothelial cells (BMECs) were detected. To explore the effect of XML on the Growth of bEnd.3 cells (mouse brain microvascular endothelial cells) by MTT, the contents of PGE_2 and related enzymes were determined by ELISA, RT-qPCR and Western blot analysis. MTT assay showed that the OD value increased in all groups except the XML 12.5 μg/mL and 50 μg/mL groups at 24 h incubation time ($p < 0.01$ or $P < 0.05$). The ELISA results showed that addition of different doses of XML, PGE2, cyclooxygenase-1(COX-1) and cyclooxygenase-2(COX-2) gradually decreased ($p < 0.01$ or $p < 0.05$). RT-qPCR and Western blot analyses showed that the mRNA and protein levels of 15-PGDH were up-regulated as the dose increased and the expression of COX-2 was down-regulated ($p < 0.01$ or $p < 0.05$). XML injection has an inhibitory effect on the levels of PGE_2 in bEnd.3 cells and may regulate the content of PEG_2-related enzymes to prevent and treat CVDs.**

RESUMEN. Con el fin de explorar los efectos de la inyección de Xinmailong (XML) sobre las enfermedades cerebrovasculares (ECV), se detectaron los contenidos de prostaglandina E_2 (PGE_2) y la enzima relacionada de las células endoteliales microvasculares del cerebro de ratón (BMEC). Para explorar el efecto de XML sobre el crecimiento de células bEnd.3 (células endoteliales microvasculares del cerebro de ratón) por MTT, se determinaron los contenidos de PGE_2 y enzimas relacionadas mediante ELISA, RT-qPCR y análisis de transferencia Western. El ensayo MTT mostró que el valor de DO aumentó en todos los grupos excepto en los grupos XML de 12,5 y 50 μg/mL a las 24 h de tiempo de incubación ($p < 0,01$ o $p <0,05$). Los resultados de ELISA mostraron que la adición de diferentes dosis de XML, PGE_2, ciclooxigenasa-1 (COX-1) y ciclooxigenasa-2 (COX-2) disminuyó gradualmente ($p < 0,01$ o $p < 0,05$). Los análisis de RT-qPCR y Western blot mostraron que los niveles de ARNm y proteína de 15-PGDH se regulaban positivamente a medida que aumentaba la dosis y la expresión de COX-2 se regulaba negativamente ($p < 0 ,01$ o $p < 0,05$). La inyección de XML tiene un efecto inhibidor sobre los niveles de PGE_2 en las células bEnd.3 y puede regular el contenido de enzimas relacionadas con PEG_2 para prevenir y tratar las ECV.

KEY WORDS: bEnd.3, COX-2, CVDs, 15-PGDH, PGE_2, XML injection.

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