

Effect of Biochanin A on Freund Adjuvant-Induced Arthritis in Rats

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SUMMARY. The present study was carried out to evaluate the anti-inflammatory effect of Biochanin A (BCA) on adjuvant-induced arthritis in mice. Arthritis was induced by intra-dermal injection of complete Freund's adjuvant (0.1 mL) into the right hind paw of Swiss albino mice. BCA was orally administered for 8 days (from the 11th to 18th day) to arthritic animals after adjuvant injection. BCA was assessed by measuring hepatic markers, lipid peroxidative markers, antioxidant status, levels of lysosomal enzymes and inflammatory markers in control and experimental animals. In adjuvant-induced arthritic animals, lipid peroxidative markers, lysosomal enzymes, and inflammatory markers increased significantly, while antioxidant enzymes decreased significantly compared to control rats. Oral administration of BCA significantly altered these above biochemical changes observed in arthritic animals to near normal conditions. Hence results of this study indicate that BCA has promising anti-inflammatory and anti-arthritic activity against adjuvant-induced arthritic animals.

RESUMEN. El presente estudio se llevó a cabo para evaluar el efecto antiinflamatorio de la Biochanina A (BCA) sobre la artritis inducida por adyuvantes en ratones. La artritis se indujo mediante inyección intradérmica de adyuvante completo de Freund (0,1 mL) en la pata trasera derecha de ratones albinos suizos. BCA se administró por vía oral durante 8 días (del día 11 al 18) a animales artríticos después de la inyección adyuvante. BCA se evaluó midiendo marcadores hepáticos, marcadores de peroxidación lipídica, estado antioxidante, niveles de enzimas lisosomales y marcadores inflamatorios en animales de control y de experimentación. En animales con artritis inducida por adyuvante, los marcadores lipídicos peroxidativos, las enzimas lisosomales y los marcadores inflamatorios aumentaron significativamente, mientras que las enzimas antioxidantes disminuyeron significativamente en comparación con las ratas de control. La administración oral de BCA alteró significativamente estos cambios bioquímicos observados en animales artríticos hasta condiciones casi normales. Por lo tanto, los resultados de este estudio indican que BCA tiene una actividad antiinflamatoria y antiartrítica prometedora contra animales artríticos inducidos por adyuvantes.

KEY WORDS: arthritis, biochanin A, complete Freund's adjuvant, inflammatory markers, lysosomal enzymes.

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