# AMIODARONE HYDROCHLORIDE AND BETAINE HYDROCHLORIDE COMBINATION: A PROMISING STRATEGY FOR MITIGATING ARTHRITIS IN RAT MODELS

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**ABSTRACT**

In an arthritic model produced by Complete Freund's adjuvant, the purpose was to investigate the therapeutic benefits of amiodarone hydrochloride and betaine hydrochloride alone and in combination. Amiodarone hydrochloride and betaine hydrochloride groups displayed significant improvements in body weight, paw volume, motility test and stair climbing ability. Blood analysis indicated that amiodarone hydrochloride and betaine hydrochloride could modulate RBC, WBC, platelet levels and hemoglobin levels. X-ray radiography demonstrated reduced joint space and increased radiodensity in the disease control, which improved with amiodarone hydrochloride and betaine hydrochloride groups. Histopathological analysis revealed reduced tissue damage in the treated groups in comparsion to disease control. Moreover, amiodarone hydrochloride and betaine hydrochloride treatment significantly reduced TNF-α, IL-6, and IL-17 levels, with betaine hydrochloride having the most pronounced effect. Intriguingly, betaine hydrochloride effectively suppressed NF-kB activity in the tissue homogenate. Amiodarone hydrochloride and betaine hydrochloride, whether administered alone or in combination, exhibited substantial anti-inflammatory and protective effects.