Nonsteroidal Anti-Inflammatory Drugs and Risk of Acute Renal Failure in the General Population


Nonsteroidal anti-inflammatory drugs (NSAIDs) are used widely as analgesic, anti-inflammatory, and antipyretic drugs. Studies have shown that NSAIDs can cause acute and chronic renal impairment. However, little is known about the renal effects of dose and duration of treatment, the risk of each of the most commonly used individual NSAIDs, and the role of comorbidity and concurrent use of other medications.

This study used information from the General Practice Research Database in the United Kingdom to assess the risk of acute renal failure (ARF) associated with NSAID use in a cohort of 386,916 subjects aged 50 to 84 years in January 1997.

During follow-up, 103 cases of ARF were identified, an incidence of 1.1 cases per 10,000 person-years. Users of NSAIDs had 3 times greater risk of ARF compared with nonusers. The increased risk was observed for both short- and long-term users of NSAIDs and declined after stopping treatment. The risk was slightly greater for users of high doses of NSAIDs. Users of NSAIDs with hypertension, heart failure, and those treated with diuretics or calcium channel blockers had an increased risk compared to nonusers of NSAIDs without these conditions. Among individual NSAIDs, meloxicam was associated with the highest risk when compared with nonuse of any NSAID.

Overall, this study showed an increased risk of ARF associated with the use of NSAIDs, particularly in patients with hypertension and/or heart failure.

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