

Letter to the Editor

Preventing non-steroidal anti-inflammatory drug-associated acute kidney injury in young adults: a medication safety and public health perspective

Sir,

Acute kidney injury (AKI) following short-term over-the-counter (OTC) non-steroidal anti-inflammatory drug (NSAID) use is an increasingly recognized yet under-recognized complication in otherwise healthy young adults.¹⁻³ Young adults frequently self-medicate for headaches, sports injuries, dysmenorrhoea, musculoskeletal pain, and viral illnesses without medical advice.⁴ Because patients often present with non-specific symptoms, AKI may initially be mistaken for dehydration or viral illness, delaying withdrawal of the offending agent and worsening renal outcomes.^{1,2} This diagnostic delay may also result in unnecessary investigations before medication induced nephrotoxicity is considered.

NSAIDs can impair renal autoregulation by inhibiting prostaglandin mediated vasodilation of the afferent arteriole, leading to reduced glomerular perfusion.^{3,5,6} This effect becomes clinically significant in situations of relative volume depletion, intercurrent illness or physiological stress, even in individuals without pre-existing kidney disease.^{1,3} Such cases are frequently misinterpreted as pre-renal azotaemia secondary to dehydration or transient illness, leading to continued use of the offending agent and delay in identifying drug-induced renal injury. Delayed diagnosis may contribute to worsening of renal dysfunction, unnecessary diagnostic investigations and increased healthcare utilization.^{1,2} The under-recognition is partly due to under-reporting of OTC medication use during clinical history taking and the misconception that short-term NSAID use is benign in younger populations.^{4,5} These observations underscore the importance of routinely enquiring about non-prescription NSAID use in all young adults presenting with unexplained AKI, together with improved patient education regarding the potential renal risks of indiscriminate analgesic use.

Although NSAID-associated renal injury is well described in high-risk populations, emerging evidence suggests that clinically significant AKI may also occur in younger individuals without comorbidities, particularly in the presence of transient physiological stressors.^{2,5,6} Situations such as intercurrent febrile illness, reduced oral intake, strenuous physical activity or dehydration may increase susceptibility by further compromising renal perfusion.^{1,3} Importantly, these risk factors are often not perceived as clinically significant by patients self-medicating with OTC analgesics, thereby increasing the likelihood of unrecognized exposure and delayed

presentation.⁴ Furthermore, early recognition and prompt discontinuation of NSAIDs are frequently associated with recovery of renal function, reinforcing the value of timely diagnosis.

OTC NSAIDs are widely available worldwide, making inappropriate self-medication a global medication safety concern. Many individuals incorrectly perceive OTC medicines as inherently safe and continue NSAID use during dehydration or acute illness without awareness of potential nephrotoxicity. These observations highlight the need for consistent public education regarding safe analgesic use.

The general notion is that young adults do not have serious kidney issues, however, this may present a significant diagnostic bias leading to lower suspicion for drug induced nephrotoxicity and delaying medication reconciliation, especially in busy outpatient or emergency departments.^{2,7} Medication histories are often typically based solely on prescribed medications leaving the clinician with little knowledge of what kind of OTC analgesics the patient has taken unless they are specifically asked.

NSAID-associated AKI is an important medication safety and public health concern. Routine medication reconciliation, counselling by primary care physicians and pharmacists, improved health literacy, and strengthened pharmacovigilance may facilitate earlier recognition of drug-induced AKI and support interventions promoting rational OTC analgesic use.

In conclusion, NSAID-associated AKI in young adults represents an under-recognized and potentially preventable clinical problem. Increased awareness among clinicians, particularly in primary care and emergency settings, is essential to ensure timely identification and withdrawal of the offending agent. Recognizing NSAID exposure as a reversible cause of AKI in young adults may facilitate earlier diagnosis, avoid unnecessary investigations, and ultimately reduce preventable kidney injury.^{1,2}

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