Urinary alkalisers for cystitis—fact or fiction?

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In 2015, The Journal reported that over a 24-hour period at Auckland City Hospital there were 81 admissions with a diagnosis of urinary tract infection (UTI), which required a mean hospital stay of four days. UTIs are a common diagnosis with significant morbidity and costs, as well as the risk of more serious complication such as pyelonephritis and sepsis.

Urinary alkalisers are frequently prescribed for symptomatic relief in patients with acute cystitis. The latest invitation for sole supply from PHARMAC states that over two million sachets of effervescent sodium citro-tartrate are funded per year in New Zealand.

However, a 2016 Cochrane Review found no evidence to support or refute the use of urinary alkalisers among 172 trials and concluded that “Until relevant evidence is generated from randomised trials, the safety and efficacy of urinary alkalisers for the symptomatic treatment of uncomplicated UTI remains unknown”.

We sought to examine the evidence for urinary alkalisers that did not fit the Cochrane Review’s strict criteria for acceptance. While this evidence lacks robustness and is prone to intrinsic biases, it is the basis upon which New Zealand prescribing of urinary alkalisers should be assessed.

In 1984, a manufacturer’s study examined the efficacy of 4g sodium citrate three times daily for 48 hours in 205 women 18–65 years with clinical cystitis. Only 21% of the patients had bacteriuria and there was no randomised control group. The authors concluded that “Patients with persisting bacteriuria tended not to have clinical benefit. However, half those with initial bacteriuria achieved symptomatic relief”.

A 2014 study of 50 women with interstitial cystitis were administered citrates orally, consisting of potassium citrate 463mg and sodium citrate 390mg, three times a day for 2–4 weeks in an open-label study. An increase in urine pH by 0.5–0.6 from the baseline was observed all day in the treatment phase. A decrease in the scores for most of the Kings Health Questionnaire (KHQ) domains was observed but these results were not significant, except for sleep/energy (P<0.01). When interpreting these results from non-controlled trials, it is important to note that a meta-analysis of placebo-controlled trials versus antibiotics in uncomplicated acute cystitis reported placebo clinical cure rates of 20–40%.

UK NICE Guidelines note that: “Although urine alkalinisation has been traditionally used to relieve the symptoms of urinary tract infection, there is a lack of good evidence to support its use”.

There may be a well-entrenched tradition of prescribing urinary alkalisers for acute cystitis, but it is important to bear in mind that there is a paucity of data to support its efficacy and remember the old adage that the most expensive medicine is the one that doesn’t work.
Competing interests: 
Nil.

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