

- Title** N-Acetylcysteine in the Prevention of Contrast-Induced Acute Kidney Injury (CIAKI)
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Aim

To assess the efficacy/effectiveness, safety, cost-effectiveness, ethical, legal, and organizational implications related to NAC in the prevention of CIAKI

Conclusions and results**Efficacy/effectiveness**

In patients with renal insufficiency, oral NAC may reduce CIAKI incidence compared with placebo. However, the optimum dose of NAC required cannot be determined. In diabetes patients, use of NAC has no significant effects in CIAKI prevention. In patients undergoing cardiac angiography, the role of NAC in CIAKI prevention was inconsistent. However, high dose NAC seems to be more effective compared to low dose NAC. Use of NAC with LOCM showed better outcome in CIAKI prevention compared to NAC with IOCM. NAC single use has no significant difference in prevention of CIAKI compared to combination of NAC with other alternatives.

Safety

No adverse events were reported with the use of oral NAC but IV NAC was associated with mild adverse events such as itching, flushing and rash.

Cost-effectiveness

No retrievable evidence on cost-effectiveness and no standard guideline for CIAKI prevention in MOH.

Ethical, legal, and organizational implications

In Malaysia, NAC is not indicated for CIAKI prevention. The off label use for CIAKI prevention require approval from the Director General of Health. Oral NAC is not listed in MOH Drug Formulary thus patients buy their own oral NAC tablet from a retail pharmacy. Adverse events which may occur pertaining to off-label use of NAC for CIAKI prevention may have legal implications.

Recommendations (if any)

Oral NAC may be used in prevention of CIAKI in renal insufficiency patients. Other factors that may influence CIAKI incidence should be considered in patients undergoing radio-contrast procedure such as types of contrast media and patients' hydration status.

Methods

Studies were identified by searching electronic databases. The following databases were searched through the Ovid interface: MEDLINE(R) In-process and other Non-Indexed Citations and Ovid MEDLINE(R) 1946 to present. Parallel searches were run in PubMed and EMBASE. No limits were applied to the search. The last search was run on September 2016. Additional articles were identified from reviewing the references of retrieved articles.

Further research/reviews required

Local effectiveness study is warranted.

Written by

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