

**Sigma's 30th International Nursing Research Congress**  
**Acetylcysteine for Preventing AKI in Patients of Clinical CKD Before**  
**Angiography: An Evidence Review**

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**Purpose:**

Acetylcysteine is an acetyl-based amino acid (cysteine), which is a common anti-spasmodic and antioxidant agent. By anti-oxidation of the drug, the free radicals produced by contrast medium are removed and reduced renal injury. The advantages of lesser expense and side effect, where some studies shed a positive view on it, have made it a common drug to prevent [renal toxicity caused by contrast medium](#) in clinical practice, even though such use is not its primary indication, especially its preventive effect in acute kidney injury remains to be determined, hence as the motivation for the following discussion.

**Methods:**

According to the four elements of the PICO (Patient/Problem, Intervention, Comparison Outcome) model to explain the problem, where P is the patient of chronic kidney disease receiving angiography; I is the use of acetylcysteine; C is the patient without the use of acetylcysteine; and O represents acute kidney injury, the method involved literature analysis. Finally, a total of three literatures on RCT were selected and included from databases, such as Airtiti Library, Cochrance Library, PubMed/Medline, and CINAHL Plus with Full text.

**Results:**

The result of the literature search showed that the use of acetylcysteine in patients could not effectively prevent kidney damage caused by contrast media, even though due to the clinician's habit and the culture in clinical background for medication, the drug was still administered as prophylaxis to avoid complications derived from the use of contrast media. And, the difference in effectiveness due to different loading doses in clinical practice still required further investigation.

**Conclusion:**

Since there is still no effective treatment for renal injury due to contrast media, prevention is thus more important. Before performing angiography for patients in high-risk group, it is necessary to evaluate risks and take appropriate measure. In addition, in term of cost, the insurance coverage of acetylcysteine is approximately 4 NTD. If 1200mg dose of drug were given twice per day in two days prior to examination, the cost per day per patient would be 50 NTD. Although the risk of injury for the drug is not high, the long-term use will only increase the medical cost for hospital.

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**Title:**

Acetylcysteine for Preventing AKI in Patients of Clinical CKD Before Angiography: An Evidence Review

**Keywords:**

Acetylcysteine, Angiography and Chronic Kidney Disease

**References:**

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**Abstract Summary:**

CKD has a huge impact on patients, families, and society. Therefore, prevention, treatment and care are more important. Acetylcystein, an aminolated (acetyl)-based amino acid (cysteine), is a common antispasmodic drug and is commonly used as a drug to prevent nephrotoxicity caused by a developer. Collect and discuss their effectiveness.

**Content Outline:****Objective**

Acetylcysteine is an acetyl-based amino acid (cysteine), which is a common anti-spasmodic and antioxidant agent. By anti-oxidation of the drug, the free radicals produced by contrast medium are removed and reduced renal injury. The advantages of lesser expense and side effect, where some studies shed a positive view on it, have made it a common drug to prevent [renal toxicity caused by contrast medium](#) in clinical practice, even though such use is not its primary indication, especially its preventive effect in acute kidney injury remains to be determined, hence as the motivation for the following discussion.

**Method**

According to the four elements of the PICO (Patient/Problem, Intervention, Comparison Outcome) model to explain the problem, where P is the patient of chronic kidney disease receiving angiography; I is the use of acetylcysteine; C is the patient without the use of acetylcysteine; and O represents acute kidney injury, the method involved literature analysis. Finally, a total of three literatures on RCT were selected and included

from databases, such as Airtiti Library, Cochrance Library, PubMed/Medline, and CINAHL Plus with Full text.

### **Result**

The result of the literature search showed that the use of acetylcysteine in patients could not effectively prevent kidney damage caused by contrast media, even though due to the clinician's habit and the culture in clinical background for medication, the drug was still administered as prophylaxis to avoid complications derived from the use of contrast media. And, the difference in effectiveness due to different loading doses in clinical practice still required further investigation.

### **Conclusion**

Since there is still no effective treatment for renal injury due to contrast media, prevention is thus more important. Before performing angiography for patients in high-risk group, it is necessary to evaluate risks and take appropriate measure. In addition, in term of cost, the insurance coverage of acetylcysteine is approximately 4 NTD. If 1200mg dose of drug were given twice per day in two days prior to examination, the cost per day per patient would be 50 NTD. Although the risk of injury for the drug is not high, the long-term use will only increase the medical cost for hospital.

### First Primary Presenting Author

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**Author Summary:** I am a Positive attitude and gentle personality person, and my specialties are dedicated to providing the highest level of professional nursing and personal service in order to bring about "Total Customer Satisfaction." I have been involved in clinical nursing for 14 years, working on surgical ward services and serving as a assistant head nurse.

### Second Author

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**Author Summary:** I am a steady and responsible person, working in the surgical ward for 11 years, focusing on clinical teaching and taking care of patients and their families.

### Third Author

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**Author Summary:** I have been in clinical work for many years. I am currently working in the surgical ward and have clinical teachers and ACLS licenses. I believe that continuous learning will help patients' care.

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**Author Summary:** I am a lively and outgoing girl. After graduation, I stepped into the work of Chi Mei Hospital. The clinical work taught me to respect life and care for people. I really like this kind of life.