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Introduction:
Acute kidney injury (AKI) is a common condition in critically ill patients. Loop diuretics are generally used as first line treatment. However, controlled trials show controversial results. We ought to search systematically and realize a meta-analysis on the matter.

Methods:
An electronic search of randomized clinical trials in adult patient treated with diuretics for AKI compared with standard treatment or a control group was conducted. The primary objective of the analysis was to assess recovery of renal function. Secondary endpoints included time to recovery of renal function, need for Renal Replacement Therapy (TRR), mortality in the Intensive Care Unit (ICU) and complications.

Results:
The search obtained 7 studies for the analysis. A total of 853 patients, 446 in the intervention group and 407 in the control group were included. Comparing those treated with diuretic vs control, the analysis showed relative risk (RR) 1.11 for renal recovery (95% CI [0.74 - 1.67], p = 0.62), RR 1.29 for recovery time (95% CI [- 3.30 - 0.72], p = 0.21), the need for TRR with RR 0.96, (95% CI [1.23 - 0.75], p = 0.74) and mortality in the ICU with RR 0.80 (95% CI [0.48 - 1.31], p = 0.52). The intervention group had an increased risk of complications compared to control (RR 1.83, 95% CI [1.40 - 2.40], p < 0.0001).

Conclusion:
The use of loop diuretic to treat AKI showed no difference in the recovery of renal function, the need for RRT or mortality in the ICU. However, it exhibited higher risk of complications.

References:
<table>
<thead>
<tr>
<th>Study</th>
<th>Country</th>
<th>Sample Size</th>
<th>Source</th>
<th>P</th>
<th>Odds Ratio</th>
<th>95% CI</th>
<th>I² (%)</th>
<th>p-value</th>
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<tbody>
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<td>Study 1</td>
<td>USA</td>
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**Forest Plot:**
- **Random Effects Model**
- **Heterogeneity Tests:**
  - Test of overall effect: z = 1.00 (p = 0.31)
  - Test of overall effect: z = 1.50 (p = 0.07)