

DSEN ABSTRACT

Serotonin-norepinephrine reuptake inhibitors and the risk of acute kidney injury

Implications

Physicians may not need to consider the risk of AKI when choosing between prescribing SNRIs versus SSRIs.

Key messages

This CNODES study found that using serotonin-norepinephrine reuptake inhibitors (SNRIs) is not associated with an increased risk of hospitalization for acute kidney injury (AKI), when compared to selective serotonin reuptake inhibitors (SSRIs).

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What is the issue?

- Serotonin-norepinephrine reuptake inhibitors (SNRI) and selective serotonin reuptake inhibitors (SSRI) are classes of antidepressants that have been shown to be better tolerated than other antidepressants.
- However, a series of 16 spontaneous reports of acute kidney injury (AKI) in people using the SNRI *duloxetine* were identified in the Canada Vigilance database and 157 reports were identified in the World Health Organization (WHO) Adverse Reaction Database. Similar cases of AKI were reported with the two other SNRIs, *venlafaxine* and *desvenlafaxine*.

What was the aim of the study?

- The primary aim of this study, conducted by the Canadian Network for Observational Drug Effect Studies (CNODES), was to determine if using SNRIs was associated with an increased risk of hospitalization for AKI, compared to using SSRIs in patients without kidney disease.
- The secondary aim was to examine the risk of AKI associated with each SNRI drug.

How was the study conducted?

- CNODES investigators identified 557,476 new users of SNRIs and 2,698,050 new users of SSRIs from eight administrative databases from Canada, the United States, and the United Kingdom.
- Up to ten controls were randomly selected and matched to each case of AKI. The number of new cases of AKI in SNRI users was then compared to the number of new cases in SSRI users. A total of 38,974 cases of AKI were matched to 384,034 controls.

What did the study find?

- CNODES has the ability to analyze a large amount of anonymous patient data to reliably assess questions of drug safety and effectiveness. Using SNRIs was not associated with an increased risk of hospitalization for AKI compared to SSRIs.
- Using the SNRIs *venlafaxine* and *desvenlafaxine* was not associated with an increased risk of AKI, but using *duloxetine* was associated with a 16% increased risk. However, this result was not statistically significant and was explained by the fact that more people with diabetes tend to use this SNRI over other antidepressants.

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Link to publication: [Renoux et al, 2015](#)