

Antibiotic-Induced Hyperkalemia and Renin-Angiotensin–System Inhibitors

Among older patients who were receiving renin-angiotensin–system inhibitors, trimethoprim-sulfamethoxazole (but not other antibiotics) increased the risk for hyperkalemia.

Recent years have seen greatly increased use of renin-angiotensin system inhibitors, including angiotensin-converting–enzyme inhibitors and angiotensin-receptor blockers. With this increase, we should expect a rise in novel drug interactions.

Knowing that hyperkalemia has been associated both with renin-angiotensin–system inhibitors and with trimethoprim, investigators in Toronto performed a population-based, nested case-control study among older patients (aged ≥ 66) who were receiving continuous treatment with one of these blockers and had also been prescribed trimethoprim-sulfamethoxazole (TMP-SMX), ciprofloxacin, norfloxacin, nitrofurantoin, or amoxicillin. Cases (371 patients who were hospitalized between 1994 and 2008 for treatment of hyperkalemia ≤ 14 days after receiving an antibiotic of interest) were each matched with one to four controls (similar patients without such hospitalization before the index date).

The risk for hyperkalemia-associated hospitalization within 14 days of antibiotic prescription was nearly sevenfold higher with TMP-SMX than with amoxicillin (adjusted odds ratio, 6.7; 95% confidence interval, 4.5–10.0). Findings were similar when the index hospitalization occurred within 7 days of antibiotic prescription. No association was seen between use of any of the other study antibiotics and development of hyperkalemia.

Comment: These findings should prompt us to consider using an alternative to TMP-SMX, if feasible, among older patients who are receiving renin-angiotensin–system inhibitors.

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