

BACTRIM INDUCED BRASH SYNDROME IN ELDERLY FEMALE: A CASE REPORT

Background

BRASH syndrome is a clinical entity comprising of bradycardia, renal failure, AV blockade, shock, and hyperkalemia. It is a vicious cycle in which AV nodal blockers and hyperkalemia act synergistically to precipitate bradycardia in patients with renal dysfunction resulting in cardiovascular collapse.

Case Presentation

89-year-old lady with history of Stage 4 CKD, hypertension, and diabetes mellitus presented with worsening generalized body weakness. On medication review, she was recently started on bactrim for treatment of a foot ulcer. Other home medications included diltiazem, lisinopril and dulaglutide. Initial vitals were significant for pulse 34, BP 90/35 mmHg and RR 19. Patient appeared somnolent but arousable. EKG was significant for third-degree heart block. Pertinent labs included potassium 6.7 and creatinine 5.8. She was treated with IV fluids and pressors for shock. She received calcium gluconate, insulin, dextrose and sodium polystyrene in the interim, until she was started on emergent dialysis. Following two sessions of dialysis, EKG reverted to sinus rhythm with resolution of complete heart block. She was eventually titrated off pressors. She was discharged on scheduled dialysis and follow up in a nephrology clinic.

Conclusion

BRASH syndrome comprises of series of events that perpetuates itself. Caution should be exercised when prescribing bactrim as it might potentiate hyperkalemia, especially in patients with chronic kidney disease who are also on AV nodal blockers. Trimethoprim in Bactrim increases this risk by inhibiting potassium excretion from the kidneys. This could lead to a cycle of clinical events resulting in BRASH syndrome.