

APPA 2021 Spring Meeting Medical Student/Resident Poster Presentation

Abstract 21-1-02

Title: Risperdal-Induced Neutropenia: a case report

Authors: Annie Herren, MD; Clinton Martin, MD

Introduction: Adverse reactions to antipsychotics are commonly known to include metabolic syndrome, tardive dyskinesia, anticholinergic effects, and QTc prolongation.¹ Neutropenia is a lesser-known adverse reaction that can occur with antipsychotic medication use, as well as with carbamazepine, procainamide, methimazole, and sulfasalazine². Agranulocytosis, which represents the severe, life-threatening form of neutropenia, is rare at an incidence of about 7 cases per million people per year³. Neutropenia can be seen in up to 1 in 30 patients on clozapine, and close monitoring of CBC is required for prescription⁴, however other antipsychotics may not be often recognized as causes of neutropenia by primary care providers. This case report presents evidence that long-term antipsychotic use should be considered in the differential for otherwise unexplained neutropenia, and it encourages providers to monitor CBC on all patients undergoing antipsychotic therapy.

Case presentation: A 33-year-old man with a history of intellectual disability, ADHD, psychosis, and impulse control disorder, as well as type 2 diabetes mellitus who presented to UAB Family Medicine to establish primary care, as well as UAB Psychiatry for medication management. He had no complaints or recent illness, and he recently moved from a group home to his mother's home. He was noted to have lost about 30lbs over the preceding 6 months. Of note, patient had been stable on Risperdal, methylphenidate, and guanfacine for many years. No records were available. Upon routine lab work, it he was found to have a low white blood count of $2.5 \times 10^3/\mu\text{L}$ (normal range 3.4-10.8). Peripheral smear was done showing absolute neutrophil count of $0.7 \times 10^3/\mu\text{L}$ (range 1.4-7.0). Reticulocyte count, ESR, and CRP were reassuring. Discussion between his primary care provider and psychiatry was held, and it was determined that Risperdal may be a cause of his neutropenia. This was tapered off over 1 month, and he was changed to aripiprazole. Subsequent neutrophil count showed improvement to $1.7 \times 10^3/\mu\text{L}$ after only 1 week, then returned to normal at $2.0 \times 10^3/\mu\text{L}$ after 3 weeks. WBC at this time was also normal at $3.6 \times 10^3/\mu\text{L}$. He did well on aripiprazole and his weight stabilized.

Impact/Discussion: The highest risk of neutropenia occurs when first initiating drug therapy, but as shown in this case, it is possible for neutropenia to occur after long-term therapy. This patient's baseline neutrophil count was unfortunately unknown. Due to his quick return to normal after cessation of Risperdal, it is reasonably assumed the drop was due to Risperdal itself. Additional research needs to be done to determine the impact of antipsychotics on blood dyscrasias with chronic therapy. We recommend primary care providers and psychiatrists participate in an interdisciplinary approach to monitoring complete blood counts and to consider antipsychotic use during the evaluation for neutropenia.

References:

1: Keepers GA, Fochtmann LJ, Anzia JM, et al. The American Psychiatric Association practice guideline for the treatment of patients with schizophrenia. American Psychiatric Association 2020

2 Kaufman DW, Kelly JP, Jurgelon JM, Anderson T, Issaragrisil S, Wiholm BE, Young NS, Leaverton P, Levy M, Shapiro S. Drugs in the aetiology of agranulocytosis and aplastic anaemia. *Eur J Haematol Suppl.* 1996;60:23-30. doi: 10.1111/j.1600-0609.1996.tb01641.x. PMID: 8987237.

3: Strom BL, Carson JL, Schinnar R, Snyder ES, Shaw M. Descriptive epidemiology of agranulocytosis. *Arch Intern Med.* 1992 Jul;152(7):1475-80. PMID: 1627027.

4: Flanagan RJ, Dunk L. Haematological toxicity of drugs used in psychiatry. *Hum Psychopharmacol.* 2008 Jan;23 Suppl 1:27-41. doi: 10.1002/hup.917. PMID: 18098216.