

APPA 2020 Virtual Conference Resident Poster Presentation

Abstract 20-2-03

Title: A Case of Clozapine-Induced Hypothermia

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Summary:

The adverse drug reaction of hyperthermia from neuromalignant syndrome is more well-known and more commonly investigated than hypothermia. We present a case of a 54-year-old African American female with past medical history of type 2 diabetes, hypertension, schizophrenia, and seizure disorder admitted to a psychiatric hospital who developed generalized weakness, garbled speech, urinary incontinence, and altered mental status. She was transferred to an emergency department as a stroke code and was admitted for further work-up. For the patient's acute encephalopathy, a head CT scan showed no acute intracranial pathology ruling out a stroke, the blood cultures were negative ruling out an infection, and the patient neurologically returned to baseline within a day ruling out an ongoing neurological cause of encephalopathy. The patient was hypothermic at 27.1 C (80.78 F) on admission but otherwise hemodynamically stable. Medical work-up for hypothermia resulted in negative blood cultures ruling out infection and TSH/T4 levels within normal limits ruling out hypothermia or myxedema coma. Her temperature was stabilized with a Bair hugger. The patient was already on clozapine 250 mg before admission to the inpatient psychiatric facility and was known to be on this current regimen for longer than 3 months. She was also currently taking topiramate 100 mg at bedtime for her seizure disorder. She had had recent medication changes a week prior to the onset of these symptoms with discontinuation of benztropine and initiation of clonazepam 1 mg twice daily. Due to continued somnolence and dysarthric speech, her clonazepam was decreased to 0.5 mg twice daily. In suspicion of clozapine-induced hypothermia, her clozapine was discontinued and quetiapine 50 mg at bedtime was initiated to treat her chronic schizophrenia. Her temperature stabilized within a few days.

Discussion:

This case highlights hypothermia as a possible adverse reaction to clozapine and illustrates the importance of monitoring the body temperature of patients, especially when initiating treatment or increasing the dosage. Common medical causes of hypothermia include hypoglycemia, sepsis, hypothyroidism, and stroke, and these were all ruled out. This patient was calculated to have a score of 4 on Naranjo Scale for the probability of an adverse drug reaction.

References:

- Kreuzer, P., Landgrebe, M., Wittmann, M., Schecklmann, M., Poeppl, T.B., Hajak, G. and Langguth, B. (2012), Hypothermia Associated With Antipsychotic Drug Use: A Clinical Case Series and Review of Current Literature. The Journal of Clinical Pharmacology, 52: 1090-1097. doi:10.1177/0091270011409233
- 2. Burk, B.G., Ward, A.H. & Clark, B. A case report of acute hypothermia during initial inpatient clozapine titration with review of current literature on clozapine-induced temperature dysregulations. *BMC Psychiatry* 20, 290 (2020). https://doi.org/10.1186/s12888-020-02695-w

- 3. Zonnenberg, C., Bueno-de-Mesquita, J. M., Ramlal, D., & Blom, J. D. (2017). Hypothermia due to Antipsychotic Medication: A Systematic Review. *Frontiers in psychiatry*, *8*, 165. https://doi.org/10.3389/fpsyt.2017.00165
- 4. van Marum, R. J., Wegewijs, M. A., Loonen, A. J., & Beers, E. (2007). Hypothermia following antipsychotic drug use. *European journal of clinical pharmacology*, *63*(6), 627–631. https://doi.org/10.1007/s00228-007-0294-4
- Papazisis, Georgios MD, PhD1; Tzellos, Thrasivoulos MD, MSc1; Tahmatzidis, Dimitrios MD2; Dolianitis, Konstantinos MD2; Kouvelas, Dimitrios MD, BPharm, PhD1 Late-Onset Clozapine-Induced Hypothermia Accompanied by Electrocardiogram Osborn Waves, Journal of Clinical Psychopharmacology: April 2009 - Volume 29 - Issue 2 - p 183-185 doi: 10.1097/JCP.0b013e31819a6a0d