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Abstract 21-1-12

Title: Analyzing Benefit vs Harm in Managing Clinically Significant Hyperprolactinemia in Patient with Treatment Resistant Schizophrenia

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Introduction: Prolactin is a hormone released from the anterior pituitary that is involved in the functioning of the reproductive, endocrine, and metabolic systems. It is synthesized and secreted by lactotrophs in response to steroids, peptides, and neurotransmitters. Inhibitory regulation is managed by dopamine binding to D2 receptors on the membranes of these cells. Antipsychotic medications remove this regulation by blocking D2 receptors, leading to potential hyperprolactinemia through uncontrolled secretion (2). Hyperprolactinemia can be asymptomatic but can also have long term consequences including amenorrhea, galactorrhea, gynecomastia, infertility, and osteoporosis (3). According to literature, if a patient has symptomatic hyperprolactinemia, the medication should be reduced in dose and serum prolactin should be remeasured after three days (6). If this is unsuccessful, a dopamine agonist such as bromocriptine can be added, or the medication should be switched to a prolactin sparing drug, such as aripiprazole or clozapine (5).

Case presentation: 40 year old woman with schizophrenia and clinically significant hyperprolactinemia in context of pituitary macroadenoma and treatment with long acting paliperidone for whom the risks of treatment of her elevated prolactin were assessed by a multi-specialty team (psychiatry, endocrinology, and neurosurgery) were assessed to be higher than interval monitoring.

Discussion: This case highlights the analysis of risks versus benefits and the treatment approach that needs to be considered when approaching medication management when the potentially detrimental long term effects to a patient due to treatment can be significant/ when psychosis is severe and refractory to most medication regimens, it is important to consider the potential harm in decreasing the dose, switching the drug, or adding a dopamine agonist compared to the symptoms from hyperprolactinemia. Additionally, it is important to recognize that medications may not be the sole cause of hyperprolactinemia and evaluation for other etiologies may be necessary for selected patients.

References

1. Ajmal A, Joffe H, Nachtigall LB. Psychotropic-induced hyperprolactinemia: a clinical review. Psychosomatics. 2014 Jan-Feb;55(1):29-36. doi: 10.1016/j.psym.2013.08.008. Epub 2013 Oct 18. PMID: 24140188.

2. Besnard I, Auclair V, Callery G, Gabriel-Bordenave C, Roberge C. Hyperprolactinémies induites par les antipsychotiques : physiopathologie, clinique et surveillance [Antipsychotic-drug-induced hyperprolactinemia: physiopathology, clinical features and guidance]. Encephale. 2014 Feb;40(1):86-94. French. doi: 10.1016/j.encep.2012.03.002. Epub 2013 Aug 5. PMID: 23928066.

3. Bostwick JR, Guthrie SK, Ellingrod VL. Antipsychotic-induced hyperprolactinemia. Pharmacotherapy. 2009 Jan;29(1):64-73. doi: 10.1592/phco.29.1.64. PMID: 19113797.

4. Majumdar A, Mangal NS. Hyperprolactinemia. J Hum Reprod Sci. 2013 Jul;6(3):168-75. doi: 10.4103/0974-1208.121400. PMID: 24347930; PMCID: PMC3853872.

5. Raveendranthan D, Rao NP, Rao MG, Mangot AG, Varambally S, Kesavan M, Venkatasubramanian G, Gangadhar BN. Add-on Aripiprazole for Atypical Antipsychotic-induced, Clinically Significant Hyperprolactinemia. Indian J Psychol Med. 2018 Jan-Feb;40(1):38-40. doi: 10.4103/IJPSYM.IJPSYM_147_17. PMID: 29403128; PMCID: PMC5795677.

6. Shlomo Melmed, Felipe F. Casanueva, Andrew R. Hoffman, David L. Kleinberg, Victor M. Montori, Janet A. Schlechte, John A. H. Wass, Diagnosis and Treatment of Hyperprolactinemia: An Endocrine Society Clinical Practice Guideline, *The Journal of Clinical Endocrinology & Metabolism*, Volume 96, Issue 2, 1 February 2011, Pages 273–288, https://doi.org/10.1210/jc.2010-1692

7. Tewksbury A, Olander A. Management of antipsychotic-induced hyperprolactinemia. Ment Health Clin [Internet]. 2016;6(4):185-90. DOI: 10.9740/mhc.2016.07.185.

8. Wu H, Deng L, Zhao L, Zhao J, Li L, Chen J. Osteoporosis associated with antipsychotic treatment in schizophrenia. Int J Endocrinol. 2013;2013:167138. doi: 10.1155/2013/167138. Epub 2013 Apr 17. PMID: 23690768; PMCID: PMC3652172.