A case report of Buprenorphine induced Hyperprolactinemia



Dr Paster Venan, ST5 in General Adult/Addictions Psychiatry Dr Praneeth Dara, ST4 in General Adult Psychiatry Dr Vyasa Immadisetty, Consultant Addictions Psychiatrist Essex Specialist Treatment and Recovery Services

AIMS and HYPOTHESIS

To ascertain the nature of endocrinological side effects during the course of opiate substitution therapy, in this particular case with Buprenorphine. The working hypothesis is that the endocrinological side effects are usually minimal during the course of opiate substitution therapy with Buprenorphine.

BACKGROUND

In the course of day-to-day clinical practice in an addiction psychiatry setting, we stumbled upon an incidence of hyperprolactinemia in a patient who was initiated on Buprenorphine, which led to searching for research evidence looking at the endocrine side- effects for patients who are prescribed with an opiate substitute medication.

METHODS – A CASE REPORT

Ms. L is an 18-year-old female referred to Addiction services with a 5-year history of Opiate abuse and dependence. At the point of referral, she was dependently using co-codamol 30/500mg taking up to 60 tablets a day as 20 three times a day. She was supported by the local young person's drug and Alcohol services at age 17 where she received a supported reduction programme. She was able to benefit from this initially, reduced her co-codamol to 44 per day in the first 3 months, and further reduce to 28 tablets per day by end of month 5. She struggled to make any progress from then on and hence was brought to the attention of addiction services. She was prescribed Buprenorphine as substitute prescribing with the dose increased up to 20 mgs per day.

Following the prescription of Buprenorphine, it was observed she had developed elevated serum prolactin levels (serum prolactin on 6/1/21 was 883 mU/L), which had been sustained with an unmistakeable temporal correlation with the prescription of buprenorphine and the onset of hyperprolactinemia.

RESULTS

CONCLUSIONS

Given the risk for hyperprolactinemia in patients treated with opioids, clinicians should endeavour to inquire about associated signs and symptoms.

REFERENCES

Opioid substitution treatment and/or long term opioid use can be associated with a number of side-effects such as sedation, nausea, vomiting and constipation. Based on the literature review following this case report, opioid induced endocrine changes are common but remain underappreciated. Opioid-associated endocrinopathy can be due to hypothalamicpituitary-gonadal axis or hypothalamicpituitary-adrenal axis dysfunction and may manifest with symptoms of hypogonadism, adrenal dysfunction, and other hormonal disturbances. The predominant physiologic consequence of hyperprolactinemia is hypogonadotropic hypogonadism which is due to suppression of pulsatile GnRH. The clinical manifestations of conditions vary significantly depending on the age and sex of the patient. Women can present with symptoms of oligomenorheaa, amenorheaa, galactorheaa, decreased libido, infertility and decreased bone mass. Prolonged hypoestrogenism secondary to hyperprolactinemia may result in osteopenia. Hyperprolactinaemic women may present with signs of chronic hyperandrogenism such as hirsutism and acne.

DISCUSSION

- Mendelson JH, Ellingboe J, Mello NK, Kuehnle J. Buprenorphine effects on plasma luteinizing hormone and prolactin in male heroin addicts. J Pharmacol Exp Ther. 1982 Feb;220(2):252–5. PMID: 7057390
- Fountas A, Chai ST, Kourkouti C, Karavitaki N. MECHANISMS OF ENDOCRINOLOGY: Endocrinology of opioids. Eur J Endocrinol. 2018 Oct 1;179(4):R183-R196. doi: 10.1530/EJE-18-0270. PMID: 30299887.
- Katz N, Mazer NA. The impact of opioids on the endocrine system. Clin J Pain. 2009 Feb;25(2):170-5. doi: 10.1097/AJP.0b013e3181850df6. PMID: 19333165.
- Rhodin A, Stridsberg M, Gordh T. Opioid endocrinopathy: a clinical problem in patients with chronic pain and long-term oral opioid treatment. Clin J Pain. 2010 Jun;26(5):374–80. doi: 10.1097/AJP.0b013e3181d1059d. PMID: 20473043.
- 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.