**Galactorrhoea induced by Bupropion augmentation of SSRI- A Case Report**

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**ABSTRACT:**

Bupropion is an antidepressant which is a Noradrenergic Dopamine Reuptake inhibitor, rarely causing any endocrine or sexual adverse effects like hyperprolactinemia leading to galactorrhoea. In this article we report a rare case where augmentation of SSRI with Bupropion led to galactorrhoea. A 21 year old female diagnosed as a case of major depressive disorder with nicotine dependence syndrome who was started on Escitalopram initially, developed galactorrhoea with hyperprolactinemia after addition of Bupropion 2 weeks later. Following this escitalopram was discontinued, yet no improvement in galactorrhoea was observed. After the discontinuation of Bupropion, complaints of galactorrhoea started resolving. WHO-UMC Causality assessment scale showed a possible/likely association, with Level 2 severity according to ADR Severity assessment scale. Therefore we should be cautious while using combination of such drugs which enhance the effect of the other, leading to hyperprolactinemia and galactorrhoea.

**Keywords:** Bupropion, Galactorrhoea, Hyperprolactinemia, Escitalopram
INTRODUCTION:

Galactorrhoea is defined as milky discharge from the breast which is neither associated with pregnancy nor with lactation. It occurs as a result of one of the presentations of Hyperprolactinemia and has varying etiologies. Etiologies may include pituitary tumors, seizures, systemic disorders like thyroid, cirrhosis, chronic renal failure and also as an adverse effect of various drugs like Antipsychotics, (with typical antipsychotics showing higher propensity to develop galactorrhoea compared to atypicals), Tricyclic antidepressants, Selective Serotonin Reuptake Inhibitors, Monoamine Oxidase Inhibitors, Opiates, Oral Contraceptives, H2 blockers etc. Bupropion is a Noradrenergic Dopamine Reuptake inhibitor which acts by inhibition of reuptake of Dopamine and Noradrenaline with downregulation of β-adrenergic receptors. However it has very limited action on serotonin and nicotinic receptors where it acts as Nicotinic Acetylcholine receptor antagonist. Bupropion can be used as monotherapy as well as augmenting agent along with other antidepressants and also can be used for cessation of cigarette smoking as an anticraving agent. It rarely causes any endocrine or sexual adverse effects.

CASE REPORT:

A 21 years old unmarried nulliparous female presented to the hospital OPD with complaints of low mood, loss of interest, decreased concentration in studies, sleep disturbance following stressor for 2 months duration, with worsening of symptoms over the last 10 days. She was admitted in view of presence of suicidal ideas. Detailed evaluation was done where she reported of smoking cigarettes in dependence pattern since past more than a year, with occasional alcohol and cannabis use. There was no history suggestive of any medical comorbidity or any menstrual complaints. General physical and systemic examination was normal. On mental status examination, she was found to have depressed affect with negative cognitions and occasional suicidal ideas, with normal perception. As per ICD-10, she was diagnosed as a case of Severe Depressive episode with Nicotine Dependence Syndrome. HAM-D Score: 19. Routine blood investigations including complete blood counts, liver function test, renal function test and thyroid function test were normal. She was started on Escitalopram 5mg which was later titrated to 10mg/day along with Clonazepam 0.5mg/day for complaints of sleep disturbances. Depressive symptoms started improving. Repeat HAM-D performed after 2 weeks was observed to be 13. But she reported of excessive craving for cigarettes, following which Bupropion 150mg/day was added for nicotine anti-craving and for augmentation for her residual depressive symptoms. Within a week of start of bupropion, she reported with complaint of Galactorrhoea. Her Prolactin level was measured to be 27.87 μg/L. To rule any organic cause of hyperprolactinemia and galactorrhoea MRI brain was done but it showed no abnormalities. There was also no history of regular use of any other medications. Following this Escitalopram was stopped and substituted with Mirtazapine 7.5mg/day which was continued for a week. However no improvement in symptoms of galactorrhoea was observed. Later both Mirtazapine and Bupropion were discontinued and she was started on Fluoxetine 20mg/day. Galactorrhoea started subsiding within 3-4 days and completely stopped within a week of discontinuing Bupropion. Repeat prolactin levels were normal. WHO-UMC Causality assessment scale showed a possible/likely association, with Level 2 severity according to ADR Severity assessment scale.
DISCUSSION:
Bupropion is known to be neutral to prolactin mechanism or even decrease prolactin levels as it increases levels of dopamine in hypothalamus inhibiting prolactin secretion. As far as our knowledge in literature, only two cases have been reported where Bupropion led to galactorrhoea. In one case report, bupropion monotherapy had resulted in galactorrhoea while in another, galactorrhoea was observed when bupropion was given along with SNRI. However mechanism is still unclear. One hypothesis is that Bupropion being a potent CYP2D6 inhibitor, when added to Escitalopram, which is primarily metabolised by CYP2D6 caused an increase in Escitalopram levels, thus potentiating its action. Another mechanism might be due to its action on serotonin receptors even though it is very limited.

CONCLUSION:
In our case report, patient developed galactorrhoea following Bupropion augmentation of Escitalopram, and improved only with discontinuation of both drugs. Therefore we should exercise caution while using combination of such drugs which enhance the effect of the other, leading to hyperprolactinemia and galactorrhoea.

Conflict of interests: None

REFERENCES: