

Re-audit of the measurement and management of prolactin levels in patients admitted to Older Adult Psychiatry at Tameside General Hospital

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Introduction

- Prolactin is a hormone secreted by the anterior pituitary gland and female reproductive organs (1) (2). The hypothalamus, neurotransmitters such as dopamine and other hormones such as oxytocin regulate its levels (3).
- Hyperprolactinaemia is the persistent elevation of prolactin levels and can be caused by physiological, pathological and iatrogenic factors. Iatrogenic causes are usually caused by medication, most commonly antipsychotics but also antidepressants, opioids, etc (4). Antipsychotic-induced hyperprolactinaemia is mediated by dopamine (D2) blockage which reduces the inhibitory effect of dopamine on prolactin secretion (5).
- Hyperprolactinaemia can be asymptomatic, but symptoms include sexual dysfunction, gynaecomastia and bone demineralisation (4) (5). It is important to screen patients based on symptoms or risk factors for developing hyperprolactinemia by measuring prolactin, history and examination (1).

Aim

Review whether there have been any changes in the measurement and management of prolactin levels in patients admitted to the older age wards since the original audit in 2022.

Methods

All male older adults admitted to Tameside General Hospital in May 2023 were included in the audit. Retrospective information on prolactin measurement and medication history were collated from their electronic medical records and drug charts.

The data was collected by Dr Aiyelaagbe and Dr Anyi and the data was analysed by Dr Aiyelaagbe using Microsoft excel.

The standards for the audit were formulated from the trust guideline on antipsychotic induced hyperprolactinaemia.

Results

- Twenty-five male patients with an average age of 74.6 years were included in the audit. The average stay of 51 days on the ward.
- Over half (52%) of the patients had a baseline prolactin measurement, with only two of them having prolactin levels above the local laboratory limits
- Eight patients (32%) were prescribed antipsychotics, of which six (75%) were also prescribed other psychotropic medication.

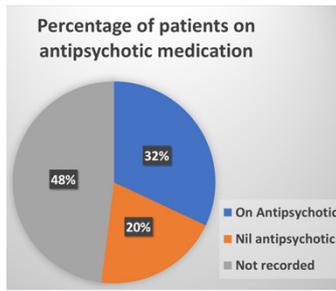


Figure 3. Pie chart showing percentages of patients prescribed antipsychotics. Number of patients = 25

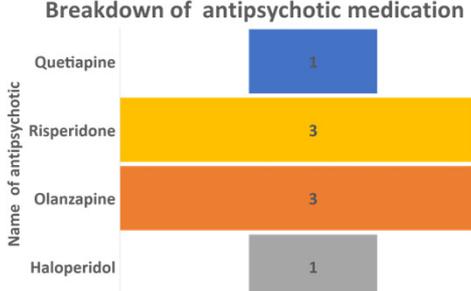


Figure 2. Graph showing breakdown of antipsychotic medication by name. Number of patients = 8

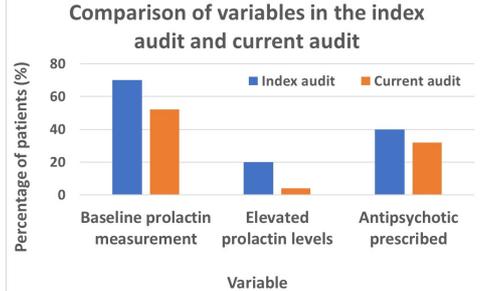


Figure 3. Graph showing comparison of three variables in the index audit and the current audit. Number of patients = 25

Fewer patients had baseline prolactin measurements (70% vs 52%) and antipsychotics prescribed (40% vs 32%) in the current audit.

There was a five-fold decrease in patients with hyperprolactinaemia in the current audit (4%) compared to the original audit (20%).

Nine patients (36%) were on other medication such as proton-pump inhibitors (PPIs) which could be implicated. No patient required active treatment of hyperprolactinaemia.

The average length of stay was halved in the current study (113 days vs 51 days).

Discussion

Some of the patients in the audit had dementia which impacted on their ability to tolerate venepuncture so 25% of them did not have any blood tests at all including prolactin levels. None of the patients had hyperprolactinaemia on baseline bloods but two (15%) patients had levels above local laboratory limits (86 -324 mu/L). Both patients were on antipsychotics. One patient had a subsequent prolactin level of 700 mu/L however no history could be elicited due to advanced dementia. The other patient was not due to have the levels repeated.

After the index audit, the wards at Tameside were changed to male older adult wards. The wards were also closed to new admissions for some time prior to data collection. This could account for some of the differences between both projects such as the halved length of admission in current audit.

The results of the original audit were circulated to junior doctors at the time but this information is often not carried forward to new cohorts of junior doctors. This could account for some of the poorer compliance noted in the current audit

Conclusion

This re-audit suggests that there is inadequate management of hyperprolactinaemia at Tameside in terms of compliance with trust guidelines. Fewer patients had a baseline prolactin measurement but none of them had prolactin levels needing active intervention. There is a need to improve compliance levels by sensitising junior doctors about the importance of surveillance for hyperprolactinaemia and access of junior doctors to guidelines in a consistent fashion.

References

1. Hyperprolactinaemia: A guide for psychiatrists. Wadoo, Ovais, et al. 2018, BJPsych Advances, pp. 158-166. 2. Management of antipsychotic-induced hyperprolactinaemia. Gupta, S, et al. 2017, BJPsych Advances, pp. 278-286. 3. Prolactin response to antipsychotics: An inpatient study. Dehelean, L, et al. 2020, PLOS ONE. 4. Pharmacological causes of hyperprolactinemia. Torre, D L and Falorni, A. 2007, Ther Clin Risk Manag, pp. 929-51. 5. Antipsychotic-induced hyperprolactinemia. Bostwick, JR, Guthrie, SK and Ellingrod, VL. 2009, Pharmacotherapy, pp. 64-73

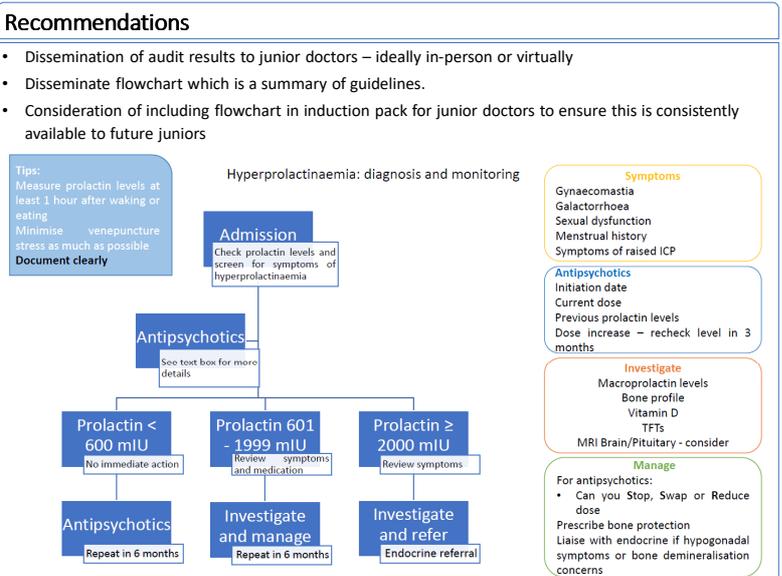


Figure 4. Flowchart for managing hyperprolactinaemia