

Clinical impact of interpretive comments on prolactin results

Comments should be **evidence-based**.
Clinical impact can be audited

Prolactin interpretation improves the **appropriateness** and **speed** of **referrals**

Prolactin interpretation improves **diagnosis of pituitary pathology**

Why prolactin comments?

Right test, right patient, right time...what about right comment? How can we assess the value of clinical comments?

Prolactin was chosen for audit because:

- Our interpretation is covered by a SOP
- Outcomes are simple to define
- We can compare outcomes for two sites in our network: 'Site A', which provides prolactin interpretation, and 'Site B', which does not comment. Both sites cover the same ICB and use the same assay, reference ranges and LIMS. Only site A routinely tests for macroprolactin.

Data and methods

Data: Historic elevated GP prolactin results, for patients with no previous elevated result. Exclusions: antipsychotic monitoring, pituitary pathology, transgender men with prolactin in the female reference range.

Site A (interpretation): 145 results in 3 months.

Site B (no interpretation): 104 results in 7 months.

I recorded:

- What was thought to be the cause of the raised prolactin?
- How many patients were referred to Endocrinology?
- How many referred patients had pituitary pathology?

Effect on referrals and outcomes

Comments increased the number of referrals

The interpretive comments at Site A were partly intended to reduce unnecessary referrals. However, a higher proportion of patients were referred at Site A than at Site B.

Comments improved the appropriateness of referrals

Although Site A's comments were associated with a higher referral rate, the referred patients were more likely to be diagnosed with pituitary pathology than at Site B. Site B's referred patients were more likely to have results attributed to stress or medication. It should be noted that two cases of prolactinoma at site A were detected due to Clinical Scientists adding prolactin after review of other results.

Comments were associated with faster referrals

Site A's referrals were made sooner, suggesting the comments give GPs more confidence that a referral is warranted. There was a tendency for site B GPs to repeat the test and to view stable raised prolactin as reassuring. However, this is more suspicious for prolactinoma than a fluctuating result.

Assumptions

The conclusions assume the two sites have similar requesting patterns by GPs, similar diagnostic accuracy in secondary care, and similar incidence of pituitary pathology.

	A: Interpretation	B: No interpretation
Total no. of patients	145	104
No. of patients referred:	31 (21%)	16 (15%)
Mean time to referral	28 days	64 days
Referred patients	31	16
- pituitary pathology	9 (29%) 8 prolactinoma 1 empty sella	2 (13%) 2 prolactinoma
- prolactin normalised	8 (26%)	7 (44%)
- medication, stress	10 (32%)	7 (44%)
- macroprolactin	2 (6%)	0
- lx ongoing/unclear	2 (6%)	0
Non-referred patients	114	88
- assumed non-significant	61 (54%)	50 (57%)
- prolactin normalised	37 (32%)	37 (42%)
- pregnant/ breastfeeding	13 (11%)	1 (1%)
- macroprolactin	1 (1%)	0

Prolactin comments used at Site A

Prolactin >ULN and <1000 mU/L on first occasion Raised prolactin, possible causes include stress and medication (eg antidepressants, antipsychotics, antiemetics, antihypertensives, cimetidine, PPIs, oestrogens). To reduce stress suggest patient rests 30 mins prior to phlebotomy. Suggest consider repeat.	Prolactin >ULN on second occasion Prolactin remains elevated. If there is no obvious cause it may be appropriate to refer the patient to Endocrinology for further investigation.	Prolactin >1000 mU/L and <2500 mU/L Raised prolactin, a possible cause is medication (eg antidepressants, antipsychotics, antiemetics, antihypertensives cimetidine, PPIs, oestrogens). If there is no obvious cause, suggest consider referral to Endocrinology for investigation.	Prolactin >2500 mU/L and not on antipsychotics Raised prolactin, suggest consider referral to Endocrinology.
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