

Information for Clinicians

Clinical Biochemistry Department

Hyperprolactinaemia - a guide for GPs

Definition

Prolactin > 700 mIU/L on a single sample without excessive venepuncture stress, at any time of day in both males and females is considered clinically significant hyperprolactinaemia and requires further investigation.

Note: The cut off of 700 mIU/L is a **clinical action threshold** and not a reference range. If a patient has symptoms of hyperprolactinaemia below this cut off, advise discussion with the Duty Biochemist (01225 824050)

Prolactin (mIU/L)	Interpretation
700 - 2000	Mild hyperprolactinaemia
2000 - 5000	Significant hyperprolactinaemia
>5000	Severe hyperprolactinaemia

Symptoms of hyperprolactinaemia

The severity of symptoms in pre-menopausal females and males correlates with the magnitude of hyperprolactinaemia.

In premenopausal females

- Oligomenorrhoea/amenorrhoea
- Galactorrhoea (when not pregnant or breast feeding)
- Vaginal dryness
- Acne
- Hirsutism

Postmenopausal females – by definition are already hypogonadal and hyperprolactinaemia does not change that. Galactorrhoea is rare because postmenopausal women are markedly hypooestrogenaemic. Hyperprolactinaemia in this group of females is usually recognised when an adenoma becomes large enough to cause headaches, impair vision, or is detected as an incidental finding on imaging.

In males

- Erectile dysfunction
- Decreased body and facial hair
- Gynaecomastia

In both sexes

- Low bone density
- Reduction in other pituitary hormone production
- Decreased libido
- Headaches
- Visual disturbances
- Infertility

In children

- Growth failure
- Delayed puberty

Causes of Hyperprolactinaemia

Factitious causes of hyperprolactinaemia

Macroprolactin – Biologically inactive immunoglobulin-bound-prolactin (macroprolactin) can cross react in the prolactin assay causing false hyperprolactinaemia. The laboratory will routinely screen for macroprolactin on every first raised (>700 IU/L) prolactin seen in an individual patient. The presence of macroprolactin is not pathological itself; if present, an estimation of bioactive prolactin is reported with interpretation to guide further investigations.

Physiological causes of hyperprolactinaemia

Pregnancy – measurement of prolactin during pregnancy is not routinely indicated or required
 Breastfeeding – measurement of prolactin during breastfeeding is not routinely indicated or required
 Exercise
 Stress (physical or psychological, including venepuncture)
 Sleep
 Post-ictal (within hours of a seizure)
 Neonatal period
 Chest wall surgery or trauma
 Non-fasted state – meals can stimulate prolactin secretion slightly

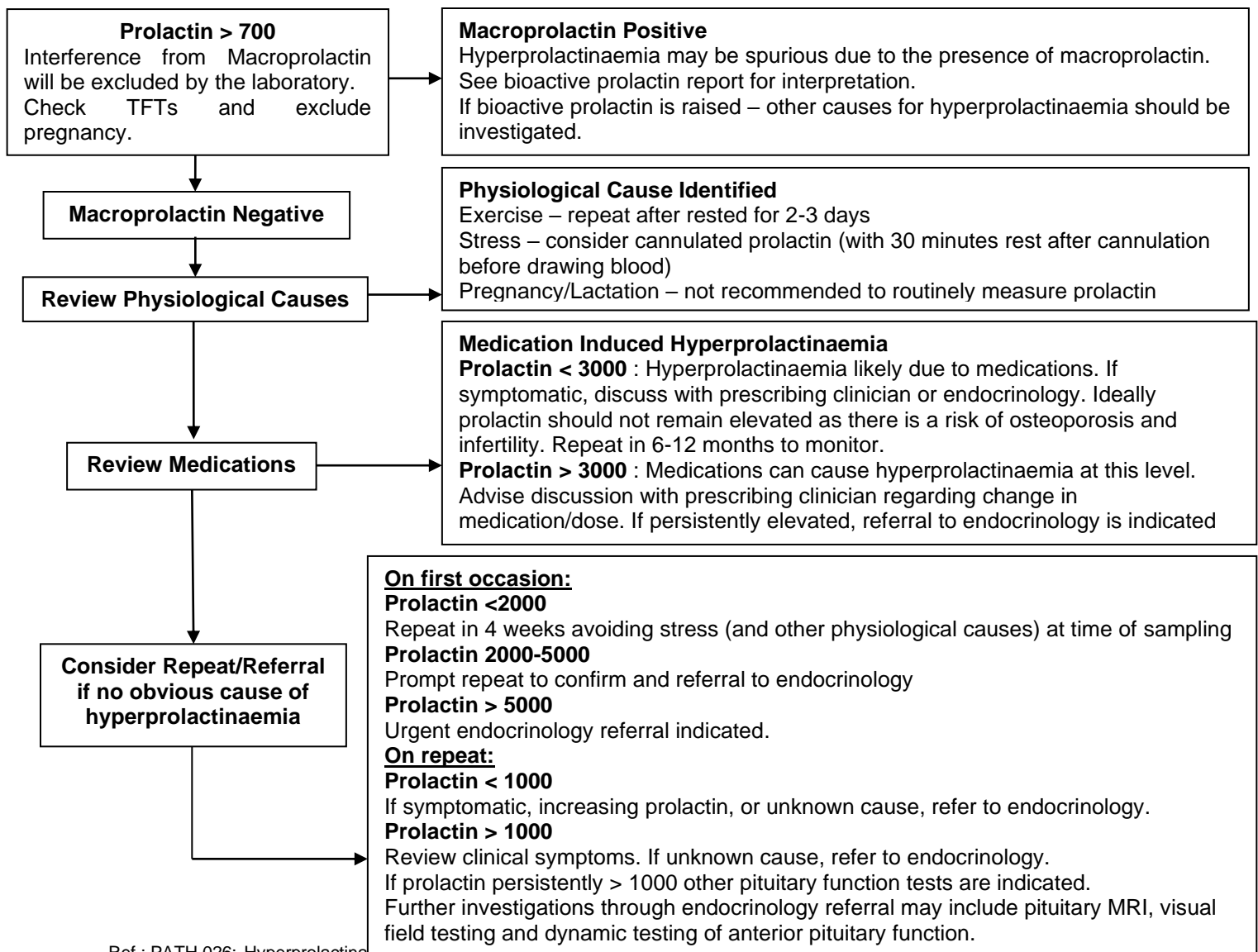
Medication induced hyperprolactinaemia can be associated with the following:

TRH
 High dose oestrogens
 Antipsychotic drugs: first generation (eg chlorpromazine, fluphenazine, haloperidol, loxapine, perphenazine, pimozide, thiothixene, trifluoperazine), second generation (eg aripiprazole, asenapine, clozapine, iloperidone, lurasidone, olanzapine, paliperidone, quetiapine, risperidone, ziprasidone)
 Antidepressants: cyclic (rare) (amitriptyline, desipramine, clomipramine, nortriptyline), other (rare) (bupropion, venlafaxine, mirtazapine, nefozadone, trazodone)
 Selective serotonin reuptake inhibitors (citalopram, fluoxetine, fluvoxamine, sertraline, paroxetine)
 Antiemetics (metoclopramide, domperidone, prochlorperazine)
 Antihypertensives: verapamil, methyldopa
 Opiates, opioids (transient, rare)
 Monoamine oxidase inhibitors
 Cimetidine (intravenous)
 Liquorice
 Miscellaneous (bezafibrate, omeprazole, trimethoprim, histamine H2 antagonists)

Pathological causes of hyperprolactinaemia

- Pituitary tumour (prolactin secreting tumour, or non-secreting pituitary tumour that prevents dopamine reaching normal prolactin producing cells)
- Hypothalamic/pituitary stalk lesion
- Neuraxis irradiation
- Spinal cord lesion
- Head injury (e.g. due to disruption of the pituitary stalk)
- Chronic renal failure (reduced prolactin clearance)
- Severe liver disease (disordered hypothalamic regulation)
- Primary hypothyroidism (increased synthesis of TRH)
- PCOS

Investigations and Management in Primary Care



Management

The main principle of management of hyperprolactinaemia is to identify and treat the underlying cause if feasible.

The goals of treatment are:

- Relieve symptoms (if present)
- Prevent complications from osteoporosis or pressure effects
- Restore fertility and sexual function

Patients with prolactinomas are managed by Endocrinology.

All prolactin results are clinically reviewed by the Duty Biochemist and interpretative comments appended to results to guide further investigations and when referral is indicated.

Further sources of Information

For further advice regarding hyperprolactinaemia please contact the duty biochemist on 01225 824050 Monday –Friday 9am-5pm.

Reference Sources

Wass et al. Diagnosis and Treatment of Hyperprolactinaemia: An Endocrine society Clinical Practice Guideline *The Journal of Clinical Endocrinology & Metabolism*; Volume 96:2 2011; 273-288

Samperi et al. Hyperprolactinaemia. *Journal of Clinical Medicine*; 2019; 8; 2203

Sommerfield. Hyperprolactinaemia. *J R Coll Physicians Edinb*; 2005; 35; 143-147

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