



GALACTORRHOEA - TREATING THE RIGHT WAY

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"Wonders of Breast Feeding"
Breast feeding is what a baby is always needing.
Breast feeding stops the breast cancer seedling.
Breast feeding helps the baby with germs fighting.
Breast feeding is every newborn's silver lining.
Breast feeding is the best gift a mother can be giving.
It's the best legacy, the generations keep cherishing.

Dr Aradhana Singh



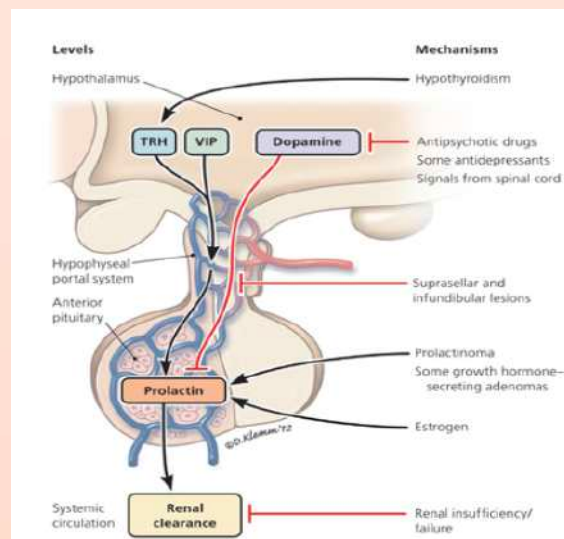
Introduction

Galactorrhoea is a milky nipple discharge unrelated to the normal milk production of breast-feeding. It is most common in women of reproductive age but can occur in nulliparous women, menopausal women and even in infants and men. Nipple discharge accounts for 2-5% of referrals to a breast clinic but should not always be synonymous with galactorrhoea as it can be associated with breast cancer.

Epidemiology

The most common cause of galactorrhoea is hyperprolactinemia, as around 90% of women with galactorrhoea have hyperprolactinemia. The prevalence of non-pregnant hyperprolactinaemia is around 0.2% in the adult population with an incidence of 13.8 cases per 100,000 person-years and is 3.5 times higher in women than men[2].

Physiology of lactation and prolactin [1, 2]



Regulation of prolactin level under physiologic and pathologic conditions. Arrows indicate stimulation, whereas bars depict inhibition. The regulation of serum prolactin occurs at different levels, which is illustrated on the left. The right side lists the common causes of hyperprolactinemia and relevant mechanisms. (TRH = thyrotropin-releasing hormone; VIP = vasoactive intestinal polypeptide.) [refaafp.org; American Academy of Family Physicians]



Etiology of Galactorrhoea

Physiological Causes-

- Pregnancy and post-lactation- Women may lactate from the second trimester, and may continue to produce milk up to two years after stopping breastfeeding.
- Fluctuating hormone levels- In Puberty and the menopause.
- Neonatal-Exposure to maternal hormones in utero can produce gynaecomastia and galactorrhoea in the newborn [known as 'witch's milk'], no action is required and it subsides rapidly and spontaneously.
- Nipple stimulation or suckling.

Non-physiological causes (8)-

- Idiopathic hyperprolactinaemia (40% of cases of hyperprolactinaemia).
- Prolactinomas (PRL levels are usually very high in this case as the tumour causes hypersecretion of PRL).
- Other causes of hypersecretion of PRL:

Addison's disease, Acromegaly, Cushing's disease, Metastatic tumours, Infections like tuberculosis, Sarcoidosis, Histiocytosis.

Drugs that raise Prolactin.(8)

Typically the level of prolactin will be lower than 200 ng/ml^[5].

The following drugs raise PRL –

- Antipsychotics - the most common drugs to cause hyperprolactinaemia-
 - Traditional phenothiazine antipsychotics (chlorpromazine, prochlorperazine, thioridazine, trifluoperazine) and haloperidol.
 - Atypical neuroleptics- like Risperidone, Amisulpride.
 - Antidepressants- rare.
 - H₂ antagonists, especially cimetidine, ranitidine.
 - Antihypertensives, including beta-blockers, methyl dopa and verapamil.
 - Contraceptives , including combined oral contraceptives and depot contraceptives.
 - Prokinetics, domperidone, metoclopramide.
 - Illicit drugs, including cannabis, opiates and amfetamines .
 - Various others, including digoxin, spironolactone, opiates, danazol,
 - sumatriptan, isoniazid and valproate.

Systemic disorders that cause hyperprolactinemia-

- Chronic kidney disease
- Liver failure
- Hypothyroidism
- Epileptic seizures
- Chest wall lesions or irritation:
 - Breast surgery, Burns, Herpes zoster, Spinal Cord Injury, Trauma.
- Pituitary stalk infiltration or interruption, due to Infiltrative diseases, tumours or trauma.



Management of Galactorrhoea

A thorough history of the patient and clinical examination is crucial in the management of galactorrhoea.

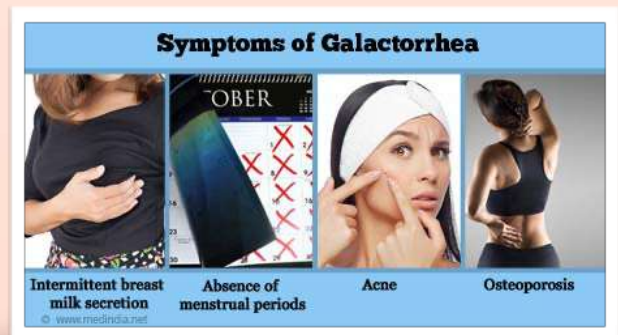
History taking

Duration of symptoms, progression, nature, colour and amount of fluid.

- Unilateral or bilateral discharge (unilateral suggests local pathology, and needs breast clinic referral).
- Spontaneous or has to be expressed.
- Note the timing of the last menstrual period. Always rule out pregnancy.
- History of drug intake – Ask about all prescribed medications, off prescription and herbal treatments and dietary supplements.
- Ask about acne, hirsutism, menstrual irregularity, reduced libido, infertility and erectile dysfunction; as these are the symptoms of hyperprolactinemia.
- Ask about thyroid disorders and other endocrine symptoms.
- Ask about headaches, visual symptoms and cranial nerve symptoms to rule out pituitary tumours .

Clinical Examination

- Examine thyroid gland and look for the signs of hypothyroidism, Cushing's disease or acromegaly.
- Neurological examination including visual fields assessment to be done if an intracranial or pituitary tumour is suspected and no other cause of galactorrhoea can be determined.
- Abdominal palpation for pregnancy.



Examine the breasts

- For assessing galactorrhoea, the patient needs to be sitting and leaning forward. The areola needs to be squeezed in the direction of the nipple. The galactorrhoea is usually bilateral and the colour of the discharge can be white or green. Bloody discharge could be a sign of breast tumours so further workup to rule out malignancy is needed.
 - A Sudan IV stain for fat droplets can confirm whether the discharge is milk or not.
- [2]
- Note any previous breast surgery scar or abnormality or change of colour or texture of the surrounding skin.
 - Palpate for any lumps and axillary nodes.



Investigations

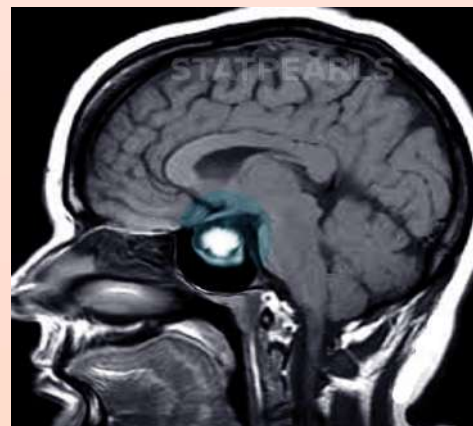
- PRL levels to be done. When PRL levels are persistently very high they suggest prolactinoma. Prolactin levels can range from slightly elevated to thousand times the upper limit of normal. In general larger adenomas cause higher prolactin levels.
- Thyroid function tests to be done to exclude hypothyroidism, as increased TRH hormone in hypothyroidism, stimulates the secretion of PRL from anterior pituitary).
- Renal and liver function.
- Pregnancy test if suspicion of pregnancy.
- Testing of visual fields to rule out optic nerve compression if tumour is in contact with the optic nerve on MRI, it needs urgent referral .4
- MRI scan of pituitary gland is needed if PRL levels are significantly raised and not explained by any other cause, or if there is irregular menstruation. [4]
- CT scans may be done if MRI is unavailable, but MRI scan is preferable .
- Other endocrine assessments (eg, for Cushing's disease or acromegaly) may be needed .
- If the nature of breast secretions is unclear, microscopy is to be done.

Objectives of treatment of Hyperprolactinemia^Z

- Restoration and maintenance of normal gonadal function.
- Restoration of normal fertility
- Prevention of osteoporosis

If a pituitary tumour is present:

- Correction of visual/neurological abnormality
- Reduction or removal of tumour mass
- Preservation of normal pituitary function
- Prevention of progression of pituitary or hypothalamic disease

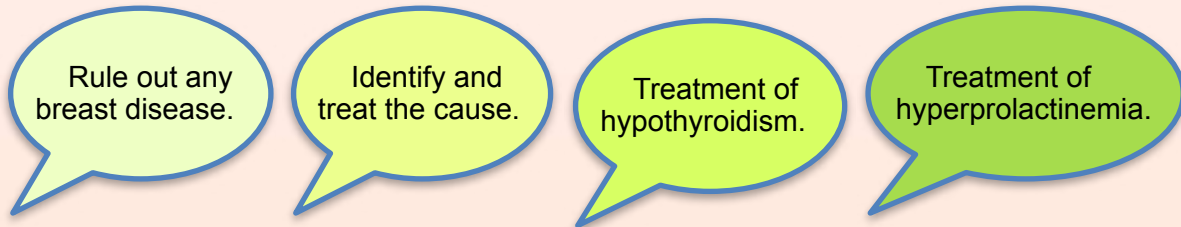


Prolactinoma MRI



Management Protocols-

Management of galactorrhoea focuses on resolving the underlying cause



- Hyperprolactinemia is seen in 75% of cases with both Amenorrhoea and galactorrhoea
- Treat hyperprolactinemia if there is a pituitary lesion or galactorrhoea with amenorrhoea if not troublesome, it can be monitored without therapy.

- The mainstay of Hyperprolactinemia is treatment with bromocriptine or cabergoline.
 - These are dopamine agonists which act on the D2 receptors present on the lactotrophs and inhibit prolactin production.
 - Dopamine agonists have proven efficacious in reducing prolactin levels in premenopausal women and restoring gonadal function in men.
 - The doses for Bromocriptine are 2.5-15 mg once daily and cabergoline are 0.25-1 mg twice weekly.[3]
 - Bromocriptine has been used the longest. Cabergoline has greater affinity and selectivity for pituitary dopamine D2 receptors and longer duration of action. Cardiac valvulopathy has been reported with high doses of cabergoline, and it is recommended to get an annual echocardiogram in patients on more than 3.5 mg/week.
- If prolactinoma is causing optic nerve compression and not relieved by medications then surgery, radiation therapy or combination of these with medications is required.[3]
- In cases of medication-induced hyperprolactinemia, the offending medication should be stopped or changed to a different class.
- These dopamine agonists, bromocriptine and cabergoline may also be used in those with normal PRL levels if galactorrhoea is troublesome or menstrual cycle irregularities are present and reassurance alone is not sufficient. This usually resolves the galactorrhoea within two months and the medication can then be stopped. [4][5]
- Hormone treatment - testosterone for men or oestrogens for women (eg, the combined oral contraceptive pill). These help to prevent osteoporosis and may improve symptoms.



Lifestyle and home remedies

Milky discharge associated with idiopathic galactorrhoea many times goes away on its own, particularly if one can avoid breast stimulation or stops medications that are known to cause nipple discharge.[6]

To lessen breast stimulation patients are advised -

- Not to overdo the touching of nipples during sexual activity
- Avoid squeezing, pinching or otherwise manipulating the nipples
- Wear comfortable clothing that minimizes friction between the fabric and the nipples.



Management Simplified

Underlying cause	Possible treatment
Medication use	Stop the medication, Change dose or switch to alternative medication.
Underactive thyroid gland (hypothyroidism)	Start thyroid medication, such as levothyroxine (Levothroid, Synthroid, others), to counter insufficient hormone production by the thyroid gland (thyroid replacement therapy).
Pituitary tumor (prolactinoma)	Start Bromocriptine or Cabergoline to shrink the tumor or offer surgery or radiotherapy.
Unknown cause	-Try a medication, such as Bromocriptine or Cabergoline, to lower the prolactin level and minimize or stop milky nipple discharge. -Reassurance



Summary

Galactorrhoea is non-lactational production of milk. Prolactin, Estrogens, and TRH all play a role in the production of milk from the breast. Galactorrhoea could be a sign of an underlying problem so a thorough investigation is required. Most common cause of galactorrhoea is hyperprolactinemia.

The condition is often managed by multidisciplinary involvement by team of gynaecologist, radiologist, endocrinologist, neurosurgeon, neurologist. Any suspicious discharge from the breast should prompt further evaluation for breast pathologies. Detailed medication history may prove important clue for diagnosing the cause. Most of the cases resolve with the medical treatment with good patient satisfaction.

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