

Hyperprolactinemia: Information for Psychiatry and Primary Care



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Sommaire : Many patients who are on antipsychotics (especially typical antipsychotics and atypicals such as Risperidone) will develop elevated prolactin levels. Symptoms in women include menstrual period problems such as amenorrhea, irregular cycle as well as galactorrhea and infertility. Symptoms in men include galactorrhea, gynecomastia, infertility and sexual dysfunction. Interventions include reducing the dosage of the antipsychotic or changing to an antipsychotic that has less effect on prolactin (such as olanzapine, quetiapine, aripiprazole).

Case: “I just can’t get pregnant!”

T. is a 30-yo female with a history of depression/anxiety, on long-standing treatment with an SSRI and risperidone for sleep issues. She has been trying to start a family but has been unable to conceive. She presents complaining of infertility...

Case: “Dude, I have breasts!”

R. is a 15-yo male with attention-deficit hyperactivity disorder (ADHD) being treated with stimulant medication and risperidone for sleep and impulse control issues. He presents complaining of gynecomastia as well as galactorrhea (discharge from his nipples)...

Normal Physiology

Dopamine (DA) acts on the pituitary and inhibits prolactin (PRL) secretion.

Pathophysiology

When dopamine is blocked for any reason (e.g. such as by D2 receptor blockade by typical antipsychotics and by atypicals such as risperidone), it leads to hyperprolactinemia (elevated prolactin).

Elevated prolactin levels (hyperprolactinemia) then cause hypogonadism due to inhibiting hypothalamic release of LHRH.

This results in low estrogen and testosterone, leading to clinical manifestations.

How Common is Prolactinemia?

Typical antipsychotics (such as haloperidol, pimozide) have the most affinity for D2 receptors, leading to sustained hyperprolactinemia.

Atypical antipsychotics differ in their effects, with risperidone having the most effect, whereas most atypicals have fewer effects.

Incidence of hyperprolactinemia (Roke et al., 2009)

- 90% with haloperidol,
- 80% with pimozide,
- 62% with risperidone,
- 31% with olanzapine, and
- 12% with quetiapine.

Common Clinical Presentations

Children/Adolescents

- Females complaining of galactorrhea, or irregular menses.
- Males complaining of galactorrhea or gynecomastia.

Men/Women

- Pre-menopausal women presenting with infertility, menstrual dysfunction or galactorrhea.
- Adult male presenting with loss of libido, impotence, infertility, gynecomastia, galactorrhea or osteoporosis.

Symptoms of Hyperprolactinemia

	Females	Males
Children/youth	Galactorrhea Gynecomastia	Galactorrhea Amenorrhea
Adults	Sexual dysfunction (usually not mentioned due to providers due to embarrassment) Loss of libido	Sexual dysfunction (usually not mentioned due to providers due to embarrassment) Loss of libido Erectile dysfunction
	Infertility Galactorrhea	Infertility Galactorrhea
	Irregular menstrual cycle Amenorrhea Premature menopause Galactorrhea	Gynecomastia Galactorrhea

Complications

Long-term consequences include osteoporosis and in adults, cancer.

Monitoring

Indications for monitoring serum prolactin level

- All patients: Some would advocate screening for hyperprolactinemia in all patients taking antipsychotics
- Symptomatic patients: Others would advocate screening those who are symptomatic, such as:

- Pre-menopausal women presenting with infertility, menstrual dysfunction or galactorrhea
- Adult male presenting with loss of libido, impotence, infertility, gynecomastia or osteoporosis

Management of Elevated Prolactin Levels

In adults, asymptomatic hyperprolactinemia as a laboratory finding by itself is not necessarily an indication for changes to medication. However, if a patient is symptomatic, however, then it is definitely recommended to make changes.

In children and youth, however, there is a stronger indication to make changes to medication, given that children/youth are still growing and building up bone density (Rosenbloom, 2010).

Medication responses due to elevated prolactin include:

1. Decreasing dosage of antipsychotic
2. Switching to another agent with less D2 antagonism (i.e. less effect on prolactin), i.e. a prolactin-sparing agent such as:
 - Aripiprazole (Abilify)
 - Quetiapine (Seroquel)
 - Olanzapine (Zyprexa)
 - Clozapine (Clozaril)

Once the offending medication is removed, prolactin levels should normalize. Once prolactin levels improve, symptoms like amenorrhea and other menstrual abnormalities should resolve back to normal.

When and Where to Refer

- **Psychiatry:** If the option is available, consider a medication consult regarding antipsychotic treatment options.
- **Endocrine consultation:** If it is not possible to change the current antipsychotic that is causing hyperprolactinemia, consider endocrine consultation to consider other options, such as:
 - Estrogen substitution such as adding progesterone agent for 5-days a month, or starting oral contraceptive or hormone replacement therapy.
 - Dopamine agonists (such as bromocriptine, cabergoline, quinagolide, and amantadine). Caution is required with dopamine agonists, as they may trigger psychosis.

Case: “I just can’t get pregnant!”

T. is a 30-yo female with a history of depression/anxiety, on long-standing treatment with an SSRI and risperidone for sleep issues. She has been trying to start a family but has been unable to conceive. She presents complaining of infertility...

You stop her risperidone and monitor. Her sleep worsens, but fortunately, she responds to Melatonin. She is successful in conceiving and thanks you profusely. You monitor closely, because you know she is at an increased risk of both antepartum and postpartum depression.

Case: “Dude, I have breasts!”

R. is a 15-yo male with attention-deficit hyperactivity disorder (ADHD) being treated with stimulant medication and risperidone for sleep and impulse control issues. He presents complaining of gynecomastia as well as galactorrhea (discharge from his nipples)...

You inform his psychiatrist, who suggests stopping the risperidone and monitoring. After stopping the risperidone,

he is grateful that his gynecomastia and galactorrhea have resolved. Unfortunately, his sleep and impulsivity are worse. Because melatonin and trazodone have been tried in the past without great success, you decide to start aripiprazole, and he responds well.

References

Antipsychotic-induced hyperprolactinemia in women, Br. J. Psychiatry Mar 2003, 182(3):199-204.

<http://bjp.rcpsych.org/content/182/3/199>

Rosenbloom A: Hyperprolactinemia with Antipsychotic Drugs in Children and Adolescents. Int. J. of Pediatric Endocrinology 2010. Retrieved July 10, 2015 from <http://www.ijpeonline.com/content/2010/1/159402>

Roke Y, van Harten PN, Boot AM, Buitelaar JK: Antipsychotic medication in children and adolescents: a descriptive review of the effects on prolactin level and associated side effects. Journal of Child and Adolescent Psychopharmacology 2009, 19(4):403-414.

About this Document

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