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# Postpartum thyroiditis

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## CLINICAL REVIEW 152

# Postpartum Thyroiditis

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Postpartum thyroiditis is a common thyroid disorder that presents during the first postpartum year. It is the occurrence of either transient hyperthyroidism, transient hypothyroidism, or transient hyperthyroidism followed by transient hypothyroidism (Fig. 1). Most, but not all, women are euthyroid 1 yr postpartum.

### *Etiology*

Postpartum thyroiditis is an exacerbation of an underlying

metropolitan area, the general prevalence of postpartum thyroiditis of 8.8% increased to 25% in women with type 1 diabetes (16). The increased prevalence of postpartum thyroiditis in women with type 1 diabetes mellitus is not surprising, because both are autoimmune disorders. Furthermore, prior studies have demonstrated an increased prevalence of thyroid antibodies in individuals with type 1 diabetes.

Postmiscarriage thyroiditis also occurs, but no prevalence

# Definition of PPT

Postpartum thyroiditis is a destructive thyroiditis induced by an autoimmune mechanism which presents during the first postpartum year.

It can also occur after spontaneous or induced abortion .

**It is the occurrence is in one of three ways :**

- Transient hyperthyroidism alone  **$\frac{1}{4}$  32%**
- Transient hypothyroidism alone  **$\frac{1}{2}$  43%**
- Transient hyperthyroidism followed by transient hypothyroidism  **$\frac{1}{4}$  25%**

# prevalence

The prevalence of postpartum thyroiditis ranges between **1.1% and 16.7%**, with a mean prevalence rate of **7.2%**.

In individuals with **type 1 diabetes mellitus**, the prevalence rate **triples**.

Specifically, in the New York metropolitan area, the general prevalence of postpartum thyroiditis of 8.8% increased to **25% in women with type 1 diabetes**

The recurrence rate in postpartum thyroiditis is high.

70 percent of women with a prior episode of postpartum thyroiditis develop a recurrence in the subsequent pregnancy.

Antithyroid peroxidase-positive women, who did not develop postpartum thyroiditis during an initial pregnancy, **have a 25% chance** of having postpartum thyroiditis after the next pregnancy.

# **The frequency of PPT is**

**25%** in women with chronic viral hepatitis,

**14%** in women with systemic lupus erythematosus,

**44%** in women with a prior history of GD ,

**27%** in patients with antipituitary antibodies.



# What is the etiology of PPT?

Postpartum thyroiditis is an autoimmune disorder associated with the presence of thyroid antibodies (**TPOAb and TgAb**), *lymphocyte abnormalities, complement activation, increased levels of IgG1, increased NK cell activity, and specific HLA haplotypes* .

**Women who are thyroid Ab positive in the first trimester have a high risk of developing PPT, ranging from 33% to 50%.**

**Women with the highest Ab titers also have the highest risk of PPT**

The occurrence of PPT reflects the rebound of the immune system in the postpartum period after the relative immune suppression of pregnancy.

## *Symptoms and diagnosis*

Symptoms can occur during either phase of postpartum thyroiditis.

**The hyperthyroid symptoms are typically subtle.**

It is often diagnosed retrospectively, with the symptoms recognized at the time of diagnosis of hypothyroidism.

The hypothyroid phase can also go unrecognized. Consequently, an undetermined percentage of women with postpartum thyroiditis remain undiagnosed.

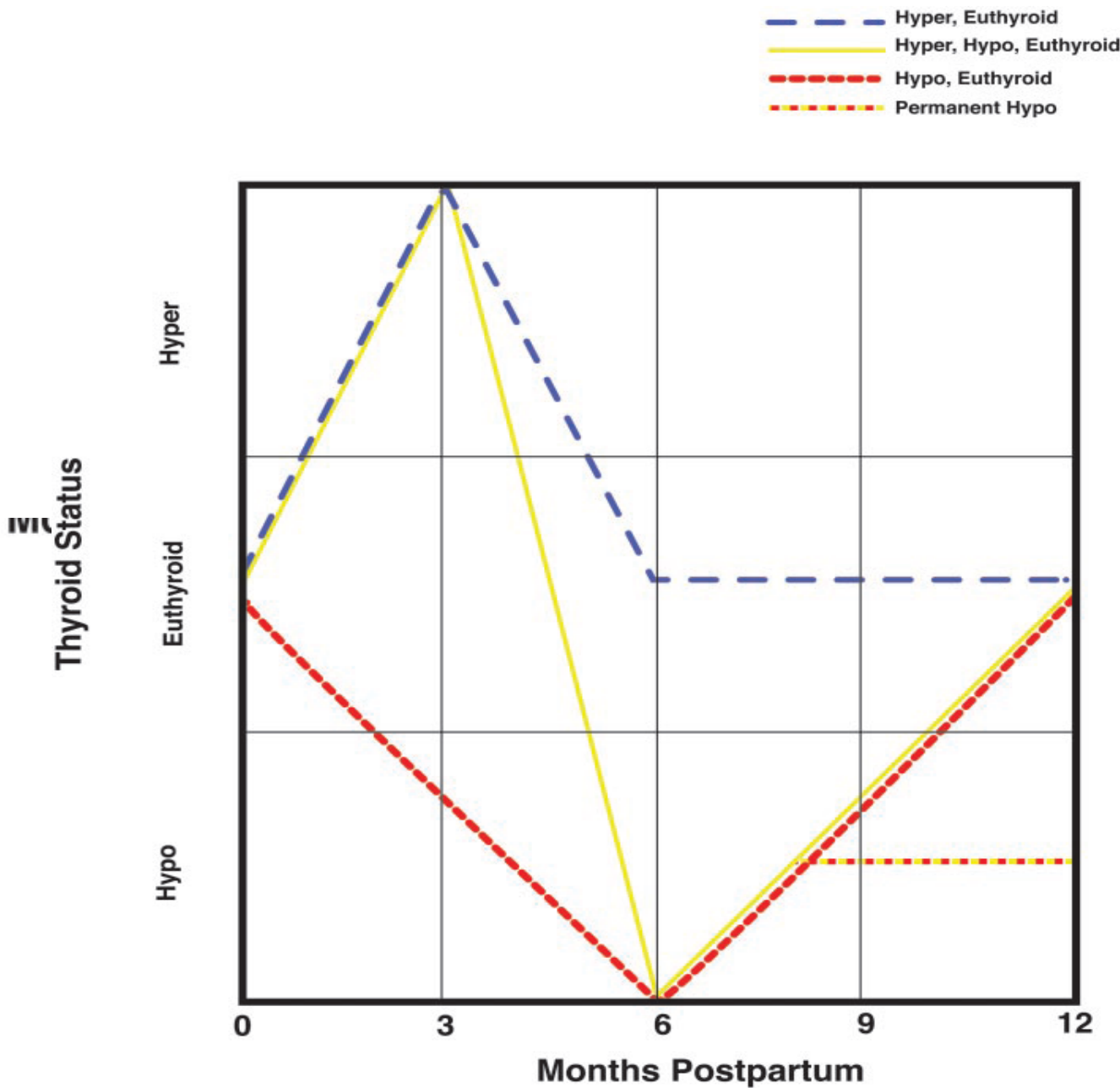
The **thyrotoxic phase** of PPT typically occurs between **2 and 6 months post partum**, but episodes have been reported as late as 1 year following delivery.

All episodes of thyrotoxicosis resolve spontaneously.

The hypothyroid phase of PPT occurs from **3 to 12 months** postpartum with **10%–20%** of cases *resulting in permanent hypothyroidism.*

- - - Hyper, Euthyroid
- Hyper, Hypo, Euthyroid
- - - Hypo, Euthyroid
- · - · - Permanent Hypo

FIG. 1. The time course and pattern of thyroid function tests in postpartum thyroiditis. Patients who experience the hypothyroid phase of postpartum thyroiditis can either return to the euthyroid state by 1 yr postpartum or remain hypothyroid.



Postpartum thyroiditis is a painless condition and most women are asymptomatic or only mildly symptomatic during the thyrotoxic phase.

This is because the degree of increase in thyroid hormones is typically mild, and T4 levels are usually more elevated than T3.

**The frequency asymptomatic hyperthyroidism is 33%**

Nevertheless, in prospective studies, reported symptoms include **irritability, heat intolerance, fatigue, and palpitations.**

It is diagnosed by the combination of a **low serum TSH concentration** in the presence of thyroid peroxidase antibodies, in women who are TSH receptor antibody-negative.

**Free T4 levels are typically elevated but may be normal.**

New onset postpartum Graves' disease is 20-fold less common than postpartum thyroiditis, but Graves' disease occurs more frequently postpartum than at other times.

**TABLE 1.** Symptoms documented to be statistically more common in women with postpartum thyroiditis as compared with a control group

First author	Year	Country	Hyperthyroid symptoms	Hypothyroid symptoms
Amino (1)	1982	Japan	Fatigue Palpitations	Not reported
Hayslip (21)	1988	USA	No increase in symptoms	Impaired concentration Carelessness Depression
Lazarus (22)	1999	UK	Lack of energy Irritability	Lack of energy Poor memory Dry skin Cold intolerance Aches and pains
Walfish (10) <sup>a</sup>	1992	Canada	Palpitations Heat intolerance Nervousness	Hypothyroid phase reported as more symptomatic than the thyrotoxic phase

<sup>a</sup> Walfish *et al.* does not list the specific hypothyroid symptoms experienced more frequently in women with postpartum thyroiditis.

**TABLE 2.** Epidemiological, clinical, and laboratory features that help distinguish postpartum thyroiditis from Graves' disease

	Hyperthyroid postpartum thyroiditis	Graves' disease
Prevalence	4.1%	0.2%
Timing (months postpartum)	2–10	4–12
Thyroid enlargement	0–40%	90%
Bruit	0%	Infrequent
Exophthalmos	0%	10–25%
TSH receptor antibody	0–25%	95%
Thyroid peroxidase positivity	80%	75%
Etiology	Autoimmune	Autoimmune



**The hypothyroid phase of postpartum thyroiditis is painless, occurs between 2 and 12 months postpartum, and is most commonly diagnosed at 6 months.**

- **The hypothyroid phase of PPT is more frequently symptomatic.**

Symptoms during the hypothyroid phase of PPT

- cold intolerance
- dry skin
- fatigue
- impaired concentration
- paresthesia .

# Permanent hypothyroidism

- Although most women with postpartum thyroiditis are euthyroid by 1 yr postpartum, long-term follow-up reveals an increased prevalence of permanent hypothyroidism. Prospective studies have shown a prevalence rate of hypothyroidism of **23% and 29% at 3.5 to 8.7 yr postpartum** ).
- Progression to permanent hypothyroidism was more common in women who presented with higher TSH levels and higher titers of thyroid peroxidase antibodies in the hypothyroid phase of postpartum thyroiditis.

# Is PPT associated with depression?

**Studies evaluating the relationship of PPT to postpartum depression have been inconsistent.**

Two studies have reported a significant association between the presence of thyroid antibodies and depression, irrespective of thyroid function, whereas another study showed no association between the presence of microsomal antibodies and postpartum depression.

A prospective trial of LT4 treatment versus placebo in postpartum TPOAb-positive women resulted in no difference in rates of postpartum depression between the two groups.

## **RECOMMENDATION 85**

All patients with depression, including postpartum depression, should be screened for thyroid dysfunction.

**Strong recommendation, low-quality evidence.**

## What is the treatment for the thyrotoxic phase of PPT?

### **RECOMMENDATION 86**

During the thyrotoxic phase of PPT, symptomatic women may be treated with b-blockers. A b-blocker that is safe for lactating women, such as **propranolol or metoprolol**, at the lowest possible dose to alleviate symptoms is the treatment of choice.

Therapy is typically required for a few weeks.

**Strong recommendation, moderate-quality evidence**

## **RECOMMENDATION 87**

ATDs are not recommended for the treatment of the thyrotoxic phase of PPT.

**Strong recommendation, high-quality evidence.**

Once the thyrotoxic phase of PPT resolves, how often should TSH be measured to screen for the hypothyroid phase?

### **RECOMMENDATION 88**

Following the resolution of the thyrotoxic phase of PPT, serum TSH should be measured in approximately 4–8 weeks (or if new symptoms develop) to screen for the hypothyroid phase.

**Strong recommendation, high-quality evidence.**



# Hypothyroidism

The percentage of patients treated with levothyroxine (l-T4) for the hypothyroid phase of postpartum thyroiditis in the 13 studies of postpartum thyroiditis varied from **13–73%**, with a mean of **34%**

## What is the treatment for the hypothyroid phase of PPT?

### **RECOMMENDATION 89**

LT4 should be considered for women with symptomatic hypothyroidism due to PPT. If treatment is not initiated, their TSH level should be checked every 4–8 weeks until thyroid function normalizes. LT4 should also be started in hypothyroid women who are attempting pregnancy or who are breastfeeding.

**Weak recommendation, moderate-quality evidence.**

In a recent survey of internists and endocrinologists, indications for treating the hypothyroid phase of postpartum thyroiditis included symptomatic hypothyroidism and a serum TSH concentration over 10 U/ml.

# How long should LT4 be continued once initiated?

## **RECOMMENDATION 90**

If LT4 is initiated for PPT, discontinuation of therapy should be attempted after 12 months. Tapering of LT4 should be avoided when a woman is actively attempting pregnancy or is pregnant.

**Weak recommendation, low-quality evidence.**

**How often should thyroid function testing be performed after the hypothyroid phase of PPT resolves?**

**RECOMMENDATION 91**

Women with a prior history of PPT should have TSH testing annually to evaluate for the development of permanent hypothyroidism.

**Strong recommendation, high-quality evidence.**

**Does treatment of thyroid Ab–positive euthyroid women during pregnancy prevent PPT?**

## **RECOMMENDATION 92**

Treatment of euthyroid thyroid Ab–positive pregnant woman with either LT4 or iodine to prevent PPT is ineffective and is not recommended.

**Strong recommendation, high-quality evidence.**

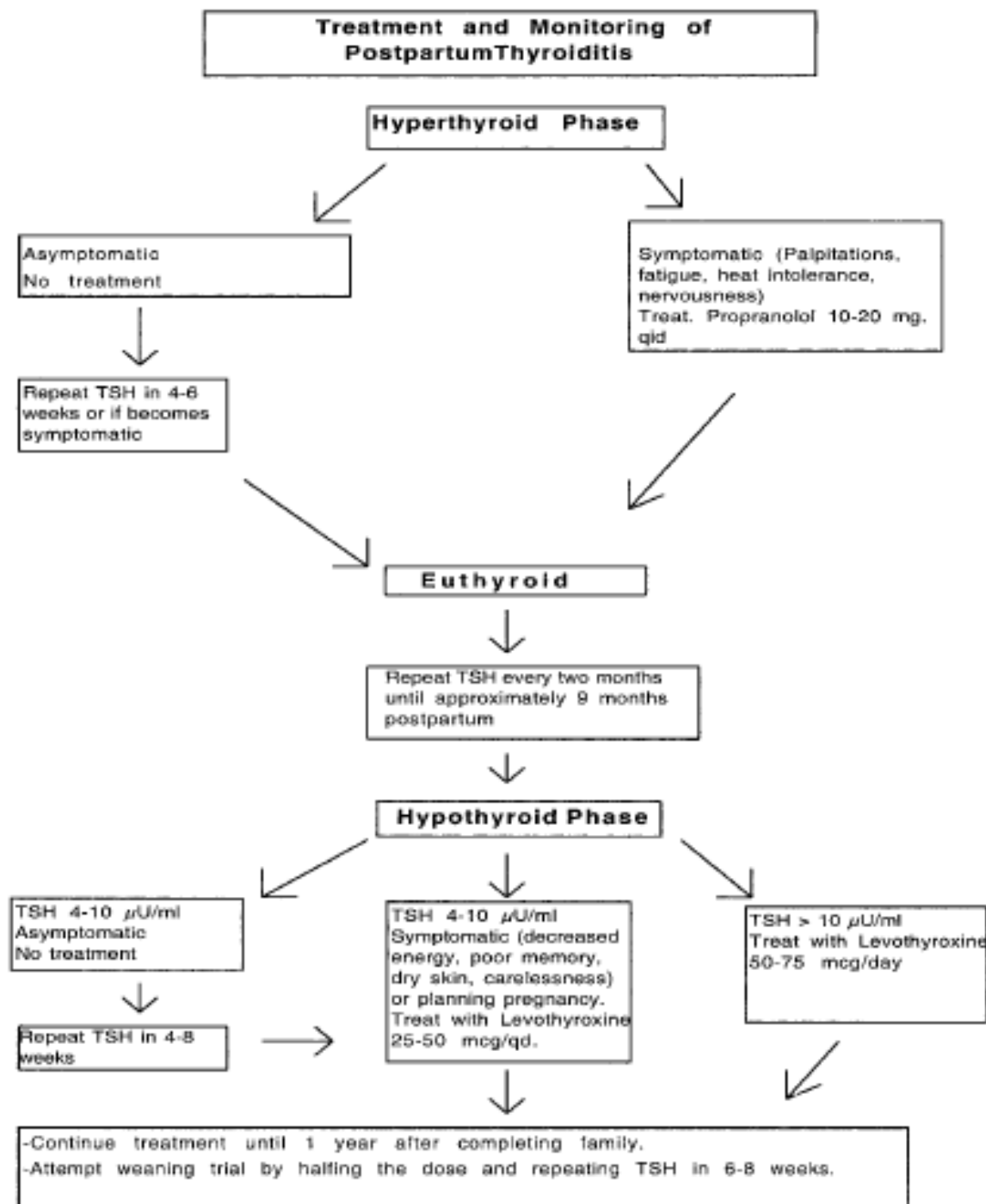
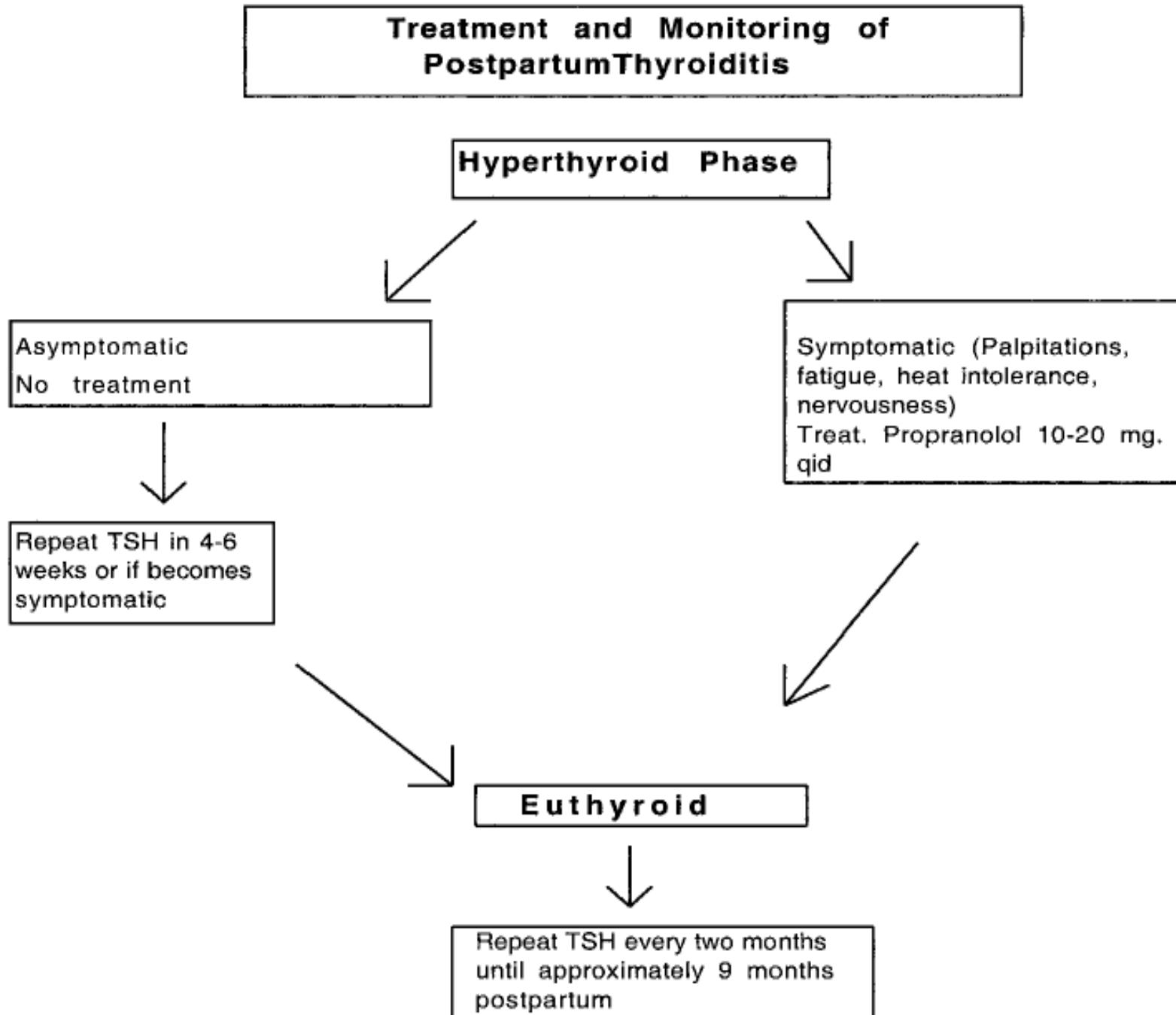
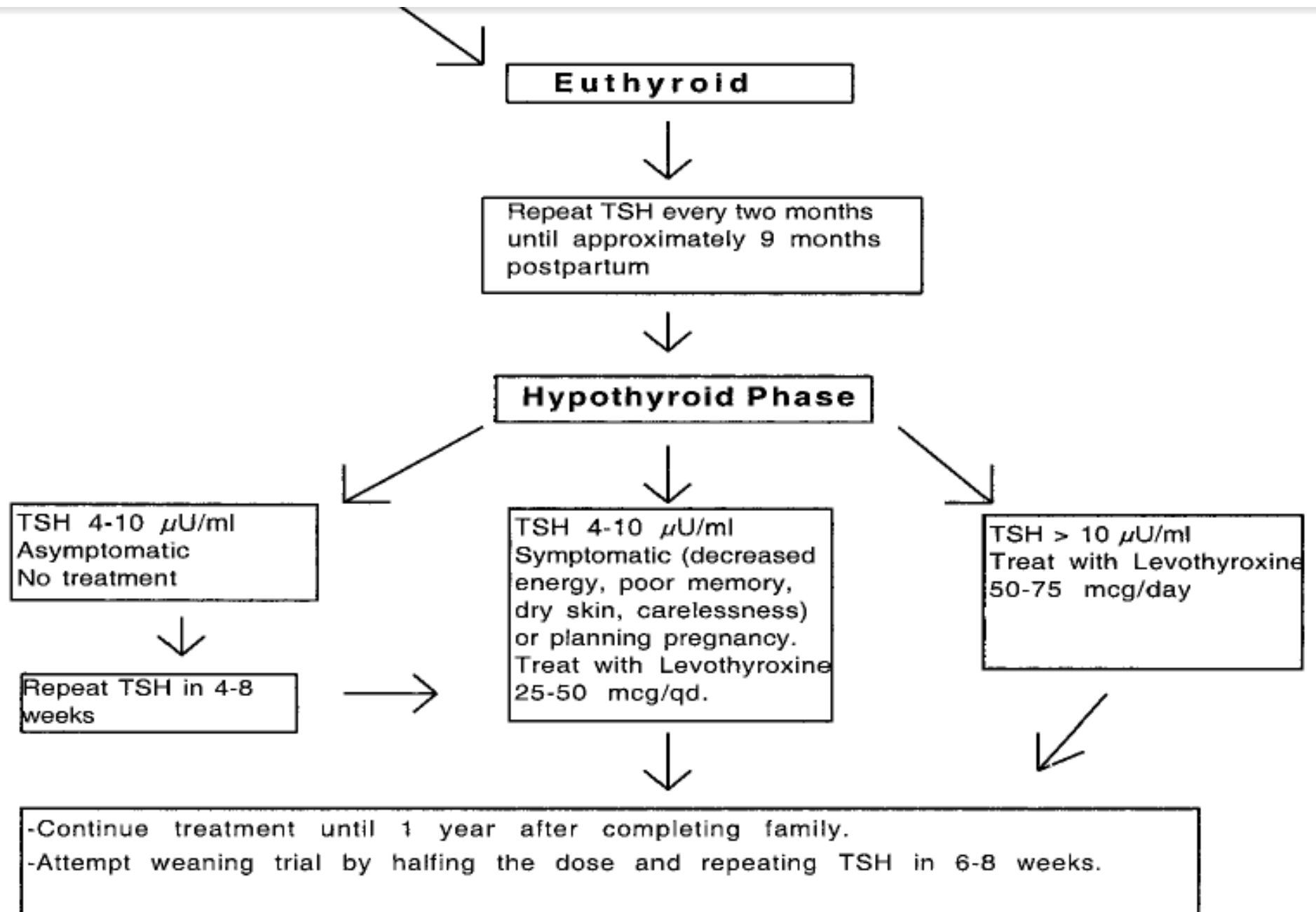


FIG. 2. An algorithm for the treatment and monitoring of postpartum thyroiditis.







**screening**

I recommend selective screening for women at high risk for postpartum thyroiditis. Specifically, women with

- 1) type 1 diabetes mellitus,
- 2) a prior episode of postpartum thyroiditis,
- 3) a history of being thyroid peroxidase antibody-positive,
- 4) a prior miscarriage should be screened at 3 months postpartum.

Women who develop **postpartum depression**, women with other **autoimmune disorders**, and women with a **strong family history of autoimmune thyroid disease** should also be screened

Screening should include an antithyroid peroxidase antibody titer and TSH level. Women who are euthyroid and antithyroid peroxidase antibody-negative require no further follow-up.

**Antithyroid peroxidase antibody-positive women should have a serum TSH performed at 6 and 9 months postpartum**

**Thank you**

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