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Review Article

REVIEW ON NEW DRUG FOR HYPOTHYROIDISM**Padmaja Devi M.S.*, Prashobh G.R. and Sheeja Rekha A.G, Athira.A.S**Asst Professor, Department of Pharmaceutical Chemistry, Sree Krishna College of Pharmacy
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Abstract:

There are several new thyroid hormone preparations that can be used to treat patients with hypothyroidism. These include a new preparation of levothyroxine called Tirosint that is the only thyroid preparation in a gel capsule. There is also new preparation of desiccated thyroid (from porcine thyroid) called WP thyroid, that is similar to Nature-Throid. Many patients have trouble absorbing standard thyroid preparations such as levothyroxine, Synthroid or Levoxyl. Certain conditions and several medications (calcium, iron, vitamins that contain calcium and iron, and antacids or proton-pump inhibitors) affect absorption of levothyroxine that can lead to variable thyroid levels with resultant symptoms of either hypothyroidism.

Keywords: Levothyroxine TIROSINT

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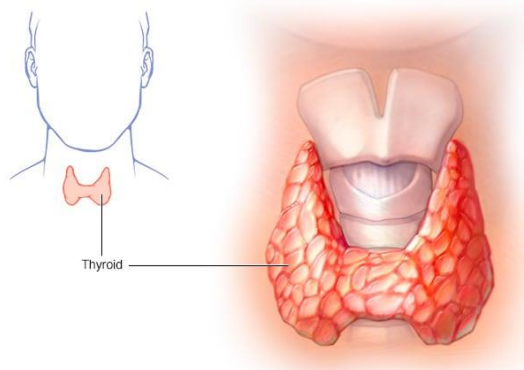


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INTRODUCTION:

Hypothyroidism happens when the thyroid gland doesn't make enough thyroid hormone. This condition also is called underactive thyroid. Hypothyroidism may not cause noticeable symptoms in its early stages. Over time, hypothyroidism that isn't treated can lead to other health problems, such as high cholesterol and heart problems.

Blood tests are used to diagnose hypothyroidism. Treatment with thyroid hormone medicine usually is simple, safe and effective once you and your health care provider find the right dosage for you.



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Symptoms

The symptoms of hypothyroidism depend on the severity of the condition. Problems tend to develop slowly, often over several years.

At first, you may barely notice the symptoms of hypothyroidism, such as fatigue and weight gain

Hypothyroidism symptoms may include:

- Tiredness.
- More sensitivity to cold.
- Constipation.
- Dry skin.
- Weight gain.
- Puffy face.
- Hoarse voice.
- Coarse hair and skin.
- Muscle weakness.
- Muscle aches, tenderness and stiffness.
- Menstrual cycles that are heavier than usual or irregular.
- Thinning hair.
- Slowed heart rate, also called bradycardia.
- Depression.
- Memory problems.

Hypothyroidism in infants

Anyone can get hypothyroidism, including infants. Most babies born without a thyroid gland or with a gland that doesn't work correctly don't have symptoms right away. But if hypothyroidism isn't diagnosed and treated, symptoms start to appear.

They may include:

- Feeding problems.
- Poor growth.
- Poor weight gain.
- Yellowing of the skin and the whites of the eyes, a condition called jaundice.
- Constipation.
- Poor muscle tone.
- Dry skin.
- Hoarse crying.
- Enlarged tongue.
- A soft swelling or bulge near the belly button, a condition called umbilical hernia.

When hypothyroidism in infants isn't treated, even mild cases can lead to severe physical and mental development problems.

Hypothyroidism in children and teens

In general, children and teens with hypothyroidism have symptoms similar to those in adults. But they also may have:

- Poor growth that leads to short stature.
- Delayed development of permanent teeth.
- Delayed puberty.
- Poor mental development.

Treatment

Alternatively, if the absorption was affected and then the condition improved or the medication was discontinued or taken separately from the thyroid medication, symptoms of hyperthyroidism can occur. An acidic stomach is needed to optimally absorb thyroid medications, so antacids and protein pump inhibitors (PPIs, Prilosec, omeprazole) can affect absorption. Conditions such as pernicious anemia, lactose intolerance, untreated celiac disease and gluten intolerance can also affect thyroid hormone absorption. The new thyroid hormone compound **Tirosint**, contains levothyroxine in a gel form with very little fillers or binders and comes in 10 doses (13 mcg, 25 mcg, 50 mcg, 75 mcg, 88 mcg, 100 mcg, 112 mcg, 125 mcg, 137 mcg, 150 mcg). It doesn't require an acidic stomach, so it can be used in patients on antacids and PPIs, and those with pernicious anemia, lactose intolerance, untreated celiac disease and gluten intolerance. Tirosint is made in a dedicated production facility that means that no other products

are produced in the same location. This eliminates the possibility of Tirosint becoming exposed to ingredients that may be used in the production of other medicines. For people with serious food allergies or food restrictions, exposure to even minute quantities of certain ingredients may cause a severe reaction. Tirosint comes packaged in a color-coded blister pack to indicate its strength. The days of the week are indicated on each 7-day blister pack which acts as a reminder to patients that they have taken their daily dose. Its absorption is not affected by black coffee. Its absorption with food has not been tested. Many of Dr. Friedman's patients prefer Tirosint because it has very little fillers or binders and want a more natural preparation. Some patients find it stronger than other preparations of levothyroxine and it often helps patients improve their hypothyroid symptoms that weren't improved with other preparations. Tirosint contains four ingredients, levothyroxine, gelatin, glycerin and water. Patients with lactose intolerance don't have to worry about it containing lactose and those who have gluten insensitivity don't have to worry about containing gluten and it has no dyes that some patients are allergic to. Other preparations of levothyroxine, including both brand names and generic, contain lactose, food dyes, magnesium stearate, sulfa, sugar, sodium, povidone (PVP) and talc and many patients have trouble tolerating or prefer not taking these components. The dosages of Tirosint include 13 mcg that allows for easy administration of a low dose of thyroid medicine that can be used also in combination with desiccated thyroid. The disadvantage of Tirosint is that there's no higher doses greater than 150 mcg, so patients on high doses need to take two medicines. Tirosint is also more expensive than other thyroid brands although there are coupons available for reduced costs on the Tirosint website. WP Thyroid, a new pure hypothyroid medication, and Nature-Throid, a hypothyroid medication around for more than 75 years, are two preparations of desiccated thyroid that can be used instead of Armour thyroid. WP Thyroid contains only two all-natural inactive ingredients, inulin (from chicory root) and medium chain triglycerides (from coconut) and is available in 8 strengths starting at ¼ grain and up to 2 grains (130 mg). Nature-Throid is hypoallergenic and available in 13 strengths (¼ grain to 5 grains). Note that 1 grain of WP Thyroid and Nature-Throid are 65 mg, while 1 grain of Armour Thyroid is 60 mg. Nature-Throid does contain a small amount of lactose monohydrate, making it a problem for some patients with lactose intolerance. It also contains 7 other inactive ingredients. Neither medication contains gluten, corn

or artificial flavors, while the same cannot be said for other hypothyroid medications.

Dr. Friedman frequently uses these products, alone or in combination, to treat hypothyroidism. He is also involved in a study on Tirosint in which patients get a free supply for 6 months. This study is available to all of Dr. Friedman's existing patients who are on another preparation of LT4 and have hypothyroid symptoms or an elevated TSH. Many of Dr. Friedman's patients who do not do well on one or more conventional thyroid preparations, do better on these medications.

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