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## THYROID DISORDER IN PERSPECTIVE OF AGADTANTRA

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### ABSTRACT

In today's era due to the lifestyle of human beings, thyroid disorder is very common. This article denotes the relation of thyroid and agadtantra. It involves thyroid disorders in perspective of Agadtantra. Modern medication for various metabolic disorders including thyroid disorders may be incorporated in the concept of garavisha as they are accumulated in the body by long-term usage. Because of environmental toxins such as industrial chemicals, heavy metals, radiations, its effects on thyroid glands. Some antithyroid drugs also affect thyroid. The antithyroid drugs such as thioamides, Iodides, Beta Adrenoreceptor blockers, Radiactive Iodine causes Thyroid hyperplasia, leucopenia, goiter, skin rashes etc. Some drugs induce thyroid toxicity or thyroid dysfunction.

**Keywords:** Agadtantra, environmental toxins, Thyroid disorder

### INTRODUCTION

Nowadays the chemicals-induced diseases are increasing and in recent years become a major health problem. As per Ayurveda perspective we can incorporate these chemicals as a part of garavisha. In Agadtantra upavisha that effect in thyroidism are bhanga, Marijuana, Haridra. The toxic things that present in environment like industrial chemicals, pesticides, toxins present in common household product affects on thyroid. Heavy metals such as cadmium, lead, mercury also affects the thyroid gland that inhibit thyroid hormone production, Depressed thyroid function etc. Some antithyroid drugs also produce toxic effects.

Antithyroid drugs that produces toxic effects are thioamides, Iodides, Beta Adrenoreceptor blockers, Radiative Iodine etc.

## MATERIAL AND METHODS

### Thyroid Disorders in perspective of Agadtantra

- In recent years everything has undergone a change – life style, habits of people, diseases and its manifestations etc.
- In case of *garavisha* also, whatever have been described in our ancient classics are not exactly the same in today's society. Now a days, the chemical induced diseases are increasing paradoxically and in recent years becomes major health problem
- As per Ayurvedic perspective we can incorporate these chemicals as a part of *garavisha*

### Common symptoms of *garavisha* and thyroid disorder(hyperthyroid and hypothyroid)

Symptoms of Garavisha	Symptoms of Hypothyroidism	Symptoms of Hyperthyroidism
Pandu(Anaemia)	✓	-
Krishna(Weight loss)	-	✓
Alpaagni	-	-
Shvayathu	✓	-
Grahani	-	✓
Shwaas	-	✓
Gulma	-	-
Daurbalya	✓	-
Yakshma	-	-

## Symptoms Of Dushivisha And Thyroid Disorder

Symptoms of dushivisha	Symptoms in hypothyroidism	Symptoms in hyperthyroidism
Atisara	-	Diarrhea
Moha(inability to think clearly)	Memory problems	-
Vaivarnya	Dry skin	-
Dhatukshaya(debility/weakness)	-	Weight loss
Unmada(psychological symptoms)	depression, mood swings	Anxiety, nervousness
Viloonpakshastu yatha vihangam (Hair fall , body gets emaciated and patient appears like bird clipped off from feathers)	Hair loss	Hair loss

### Upavisha that effect in Thyroidism :

#### Bhanga(Cannabis sativa) :

- Cannabidiol(CBD) and THC(Tetra hydro cannabinol),both are marijuana components have been shown to modulate downward inflammation in hypothyroidism throughout the entire body.
- The active ingredient of marijuana called cannabinoids, have been shown to have anti bacterial, anti cancer, anti inflammatory and anxiety reducing properties.
- There are many issues to look at in thyroid disease.The condition could be cancerous, there could be an excess or deficiency in iodine, there could an infection and fluid build up a benign tumour, cancer, infection or hormonal disorder. The absolutely amazing thing about the cannabinoids in marijuana is that they have been shown to help every one of the listed conditions.

- Marijuana can definitely modify receptors that control metabolism. Certain strains known to be uplifting and some sedating.
- New strain high in the cannabinoid without psychoactive component tends to balance metabolism

**Action of Marijuana in Thyroid Disorders<sup>[1]</sup>**

**Action in Hyperthyroidism:**

Thyroid disorders	Sign and symptoms	Action of marijuana
Toxic adenomas	Nodules in thyroid	Induce suicide in rogue cells (tumours)
Subacute thyroiditis	Inflammation of thyroid that causes leak excess hormones	Reduces inflammation, cannabigerol (CBG) take out methillin resistant staphylococcus aureus (MRSA)
Pituitary gland disorders or cancerous growth in thyroid gland		Anti cancerous activity
Hashimoto's thyroiditis	Inflammation, enlarged thyroid	CBD, THC modulate downward inflammation throughout the entire body
Pituitary disorders in hypothyroidism	Development of tumors	Anti tumor properties
Cancer	Cancerous nodules	Kills cancer cells

**Role of Haridra(Curcuma longa) in hypothyroidism :<sup>[2]</sup>**

Mentioned in Vishaghna mahakashaya decribed by Acharya Charaka.

- Relieves inflammation.
- Prevention and management of thyroid cancer
- Cognitive functioning

**Action of Curcumin in thyroid disorders :**

Thyroid disorders	Action of curcumin
Thyroiditis(Inflammation of thyroid gland)	Anti inflammatory effect
Chronic urticaria in hypothyroidism	Anti inflammatory effect
Goiterogenesis	Reduces goiterogenesis
Reduces goiterogenesis	Enhances level of thyroid hormones at young age but reduces them in aged individuals
Disruption of liver enzymes in hyperthyroidism	Restores liver function

**ENVIRONMENTAL TOXICITY AND ITS EFFECT ON THYROID<sup>[3]</sup>**

- Environmental factors ranging from perchlorate in rocket fuel to polychlorinated biphenols, have shown influence on thyroid function.
- Increase risk of Autoimmune disorders

- Environmental agents Interfers with thyroid function at multiple site Thyroid Synthesis, Thyroid metabolism & Excretion, Thyroid hormone action
- Most of these agents reduce circulating thyroid hormone levels or impaired thyroid hormone action, although some may influence pituitary & thyrotropin (TSH) or even be partial thyroid hormone receptor agonist.

**Industrial chemicals**<sup>[4]</sup>

**A. Perchlorate**

**Source**

Military applications including rocket fuel & explosives, leather, rubber

**Action :**

Reduces thyroid hormone production.

**B. Polychlorinated Biphenyls or PCB**

**Source**

Electrical equipments, Plastics, adhesives & paints

**Action**

Supress the production of thyroid hormone receptor.

Raise thyroid antibody levels & promote enlargement of thyroid gland

**C. Dioxin**

**Source**

Byproduct of manufacturing processes, including pesticide & plastic production

**Action**

Associated with decreased T4 & reduced thyroid function

**D. Pesticides**

**Source**

Pesticides

**Action**

May affect the thyroid gland’s production of hormones.

**Household products**<sup>[5]</sup>

**a) Flame retardants (Polybrominated diphenyl ethers)**

**Source**

Found in computer, TV screens, furniture

**Action**

Disturb thyroid function

**b) Plastics**

**Source**

Food storage containers, Water bottles, Children toys, Phthalates- decrease thyroid function

**Action**

Bisphenol A (BPA)- decreases thyroid receptor site sensitivity

**c) Antibacterial**

**chemical Triclosan**

Liquid hand soap,

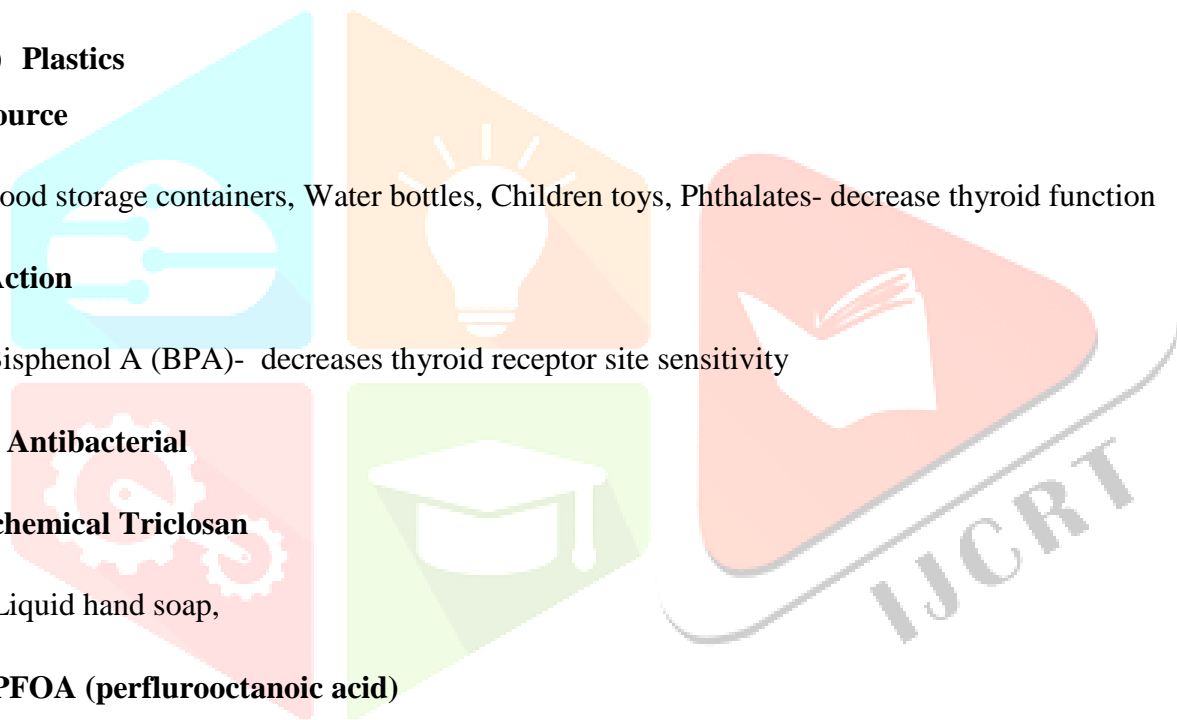
**PFOA (perflurooctanoic acid)**

**Source**

used in non-stick cookware

**Action**

decrease T4, ultimately lowering Thyroid function.



**Heavy metals**

**a) Cadmium**

**Source**

Mining, sewage sludge, batteries,plastics

**Action**

Initiate thyroid cell hyperplasia,which may lead to thyroid cancer

**b) Lead**

**Source**

Paint in older homes, inexpensive metal jewelry, chlidren toys

**Action**

Depressed thyroid function & elevated TSH

**c) Mercury**

**Source**

Dental amalgams, sea food, pollution from coal burning power plants

**Action**

Inhibit thyroid hormone production

**d) Aluminium**

**Source**

Antacids, deodrant, vaccines & alumium based cookware

**Action**

affects iodide uptake & thyroid hormone production

**Radiation**

- Most common thyroid manifestation of radiation is thyroid hypofunction, thyroid nodules and thyroid cancer
- Autoimmune thyroid disease has been linked to therapeutic medical radiation/environmental radiation



### **Medical radiation**

- External Radiation for Hodgkin's disease
- Stimulation of Antithyroid antibodies & autoimmune thyroid disease. Thyroid hypofunction most commonly

### **Dietary Factors\ Medications with high iodine composition**

Excess Iodine Reduce thyroid hormone production & release Wolff chaikoff effect

Persistant hypothyroidism

### **Cigarette smoking & Autoimmune thyroid diseases<sup>[6]</sup>**

Cigarette smoking Cigarette smoke contains cyanide which is metabolized to thiocyanate and can interfere with iodine concentration in the thyroid and lactating breast

cessation of smoking cessation of smoking may be associated with weight gain, and hypothyroidism should be considered as a cause.

### **Toxic effects of Antithyroid drugs<sup>[7]</sup>**

- Thyroid hormone preparations, especially Thyroxine are widely used either at replacement doses to correct hypothyroidism or at suppressive doses to abolish thyrotropin (thyroid-stimulating hormone) secretion.
- Thionamide (methimazole, carbimazole, propylthiouracil) are the most widely used antithyroid drugs.
- They are given for long periods of time and cause adverse effects in 3 to 5 % of patients.
- In most cases, adverse effects are minor and transient (e.g. skin rash, Itching, Mild leucopenia etc.) The dangerous effect is Agranulocytosis, which occurs in 0.1 to 0.5% of patients. Sometimes this life threatening conditions can be difficult to manage.

LIST OF ANTITHYROID DRUGS AND ITS SIDE EFFECTS<sup>[8]</sup>

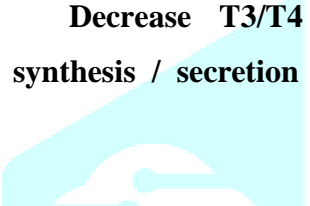
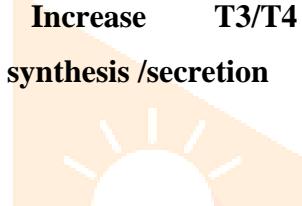
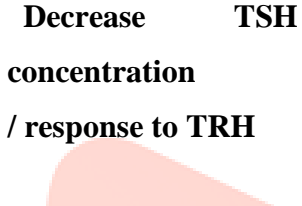
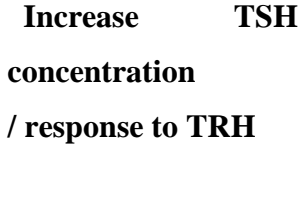
Antithyroid drugs	Side effects
<b>Thioamides</b>	<ul style="list-style-type: none"> <li>• Thyroid hyperplasia</li> <li>• Skin rash (3% to 5%),</li> <li>• Aplastic anemia</li> <li>• Myalgias</li> <li>• Arthralgias</li> </ul>
<b>Propylthiouracil (PTU)</b>	<ul style="list-style-type: none"> <li>• Dermatologic reactions</li> <li>• Leukopenia</li> <li>• Hepatitis</li> <li>• Goiter</li> <li>• Alopecia</li> <li>• Thrombocytopenia</li> </ul>
<b>Methyl Thiouracil</b>	<ul style="list-style-type: none"> <li>• Agranulocytosis</li> <li>• Exfoliative Dermatitis</li> <li>• Hepatitis</li> </ul>
<b>Methimazole</b>	<ul style="list-style-type: none"> <li>• Alopecia</li> <li>• Aplastic anemia</li> <li>• Dermatologic reactions (Eg.rash,pruritus,skin)</li> <li>• Neuritis</li> <li>• Polyarthritis</li> </ul>
<b>Carbimazole</b>	<ul style="list-style-type: none"> <li>• Painful Joints</li> <li>• Muscle Pain</li> <li>• Blood Disorders</li> <li>• Bleeding Cutaneous Vasculitis</li> </ul>
<b>Iodide Sodium iodide</b>	<ul style="list-style-type: none"> <li>• Hypersensitivity reactions</li> <li>• Fetal Toxicities</li> <li>• Transient infertility</li> </ul>

**Drug Inducing Thyroid Toxicity /dysfunction<sup>[9]</sup>**

**At four different levels :-**

- 1) May alter the synthesis and/or secretion of thyroid hormone
- 2) May change the serum concentrations of thyroid hormones by acting at the level of binding proteins or by competing for their hormone binding sites
- 3) May modify cellular uptake and metabolism of thyroid hormone.
- 4) May interfere with hormone action at the target tissue.

**Drugs that affect synthesis / secretion of Thyroid hormone<sup>[10]</sup>**

 <b>Decrease T3/T4 synthesis / secretion</b>	 <b>Increase T3/T4 synthesis /secretion</b>	 <b>Decrease TSH concentration / response to TRH</b>	 <b>Increase TSH concentration / response to TRH</b>
Lithium Iodide Thionamides (Propylthiouracil, Methimazole, Carbimazole) Thiocyanate Perchlorate Amiodarone Cytokines (IFN- $\gamma$ , IL-2, GM-CSF) Aminoglutethimide	Iodide Amiodarone Cytokines (IFN- $\gamma$ , IL-2, GM-CSF)	T4, T3,Glucocorticoids Growth hormone Octreotide, somatostatin Opiates Dopamine L- dopa, Bromocriptine Pimozide Phentolamine Thioridazine	Iodine Lithium Dopamine-antagonists

## CONCLUSION

In today's era, the lifestyle of people is very advanced due to these advanced lifestyle people are more prone to disorders such as diabetes, thyroid, hypertension etc. In this article we focused on thyroid disorders its relation to Agadtantra. In Agadtantra we studied about upavisha. Some of the upavisha that effect in thyroidism are bhanga, Marijuana, Haridra etc. Now a days the environment gets polluted because of industrial chemicals, heavy metals, due to radiations that also affects thyroid. Some antithyroid drugs also produces toxic effects. There are some drugs because of that they induces thyroid toxicity or dysfunction. In these way thyroid disorder is related with Agadtantra.

## REFERENCES

1. <https://pubmed.ncbi.nlm.nih.gov>
2. <https://pubmed.ncbi.nlm.nih.gov>
3. <https://kresserstitute.com>
4. <https://www.ncbi.nlm.nih.gov>
5. <https://www.publichealth.columbia.edu>
6. <https://aje.bioscientifica.com>
7. [www.ncbi.nlm.nih.gov](http://www.ncbi.nlm.nih.gov)
8. <https://www.rxlist.com>
9. <https://benthamscience.com>
10. <https://www.nejm.org>

