

Info

Iodine sources	-salt -bread -fishes -diary products (milk derivatives)
Thyrotoxicosis	-is local toxicity due to high amount of thyroids -all hypertsm have it, but not all who have it have hypertsm
Hypertsm drugs	-anti-thyroids (PTU + methimazole) -iodines -reactive iodine -beta blockers

Hypertsm

(1) thioAmides (anti-thyroids)

Drugs	-PTU (propylThioUracil) -methiomazole -carbimazole (gets converted to methio once taken)	
MOA	-peroxidase inhibition -only PTU can also block T4 conversion to T3	
Absorbtion	Rapid	
Accumulation	Accumulate in thyroid gland	
Side effects	<p>abnormal taste & smell (rare) -with methima only</p> <p>anti-neutrophils Ig (rare) -with PTU only -must be check during pregnancy</p> <p>agranulocytosis -also seen in graves -seen after 3 months of treatment starter -checked by CBC</p> <p>Immune-allergic hepatitis -specially in PTU</p> <p>Polyarthritis -known as “anti-thyroid arthritis”</p> <p>Arthralgia -joints pain</p> <p>Skin infl -urticarial: itchable redness -macular: diffuse, non-itchable redness</p> <p>GIT disturbance</p>	
	PTU	Methimazole
Pr binding	Yes	No
Excretion	Within 24h	Within 48h
HI	Short	Long
Pregnancy	Yes (binds to Pr & crosses placenta)	No (conc in thyroid & crosses placenta)
Breast feeding	allowed (minute secretion in milk)	No

(2) Iodines

Drugs	-iopanoic -ipodate (both contain: lugol & potassium)
MOA	-high serum iodine triggers wolff effect -block T4 conversion to T3
Disadv	Its action is very limited (symptoms will shortly re-appear)
Ind	-prior to thyroidectomy (cuz it shrank the gland & its vessels)
Contraind	-not to be used singularly -pregnancy
side effect	Iodism (iodine toxicity: skin rash, oral ulcers, metallic taste)

(3) Radioactive iodine

Note	All radioactive subs cause necrosis & tumors risk
Drugs	- <u>¹³¹I</u> (isotope)
MOA	-discharge of beta rays after the drug is taken & accumulate in thyroid -causes severe thyroid destruction & prolonged hypotism
Adv	-easily used, effective & painless -cheap
Disadv	-improvement takes 3 months
HI	5 days
Pregnancy	Crosses placenta & is excreted in milk
Ind	-elders hypertsm (>40yo) -graves -toxic nodular thyroid goiter -used as a diagnostic tool
Side effects	-delayed hypotism (<u>common</u>) -cytotoxicity (thyroid necrosis & fibrosis) -genetic damage (may cause infertility) -tumors & leukemias

(4) beta blockers

(adrenal receptors blockers)

Drugs	-propranolol -atenolol -metoprolol
Ind	-adjunctive (helper to the primary drug) -relief hypertsm adrenergic symptoms: (tremors, palpitation, heat intolerance, nervousness)
Contraind	Propranolol is contraind in asthmatic patients, cuz unlike the other 2, its non-specific and will act everywhere

(5) thyroidectomy

Ind	-hyper goiter -multinodular thyroid goiter
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Thyrotoxicosis treatment during pregnancy

Before pregnancy starter (in suspected pregnancy)	131 I or subtotal thyroidectomy
During actual pregnancy	PTU

Thyroid storm

Is	Emergency cause of sudden exaggerated hypertsm symptoms
Symptoms	-hyper metabolism -hyper adrenergic activities -heart failure & shock
Management	-ICU immediate placement -correct electrolytes disturbance -treat cardiac arr. (if present) -apply ice packs (cuz patient would be hot af. "hyperthermia") -usage of anti-adrenergic drugs -high dose of PTU (cuz it acts fast) (might cause acute liver failure, so check LFT const.) -administration of iodines via nasogastric tube -IV hydrocortisone to maintain BP & prevent shock -in severe cases: plasmapheresis