

LITHIUM

Bipolar manic depressive psychosis.

Manic symptoms

- Racing of thoughts.
- Talking rapidly.
- Sleeping very little.

Pathophysiology

Genetic predisposition
Medication / substance abuse.
Elevated NA / DA

Antimanic drugs

- Lithium salts -
lithium carbonate
- Anticonvulsants -
carbamazepine
Valproate
Lamotrigine
- Atypical antipsychotics
Aripiprazole
Quetiapine
Olanzapine
Risperidone

→ Small monovalent cation.

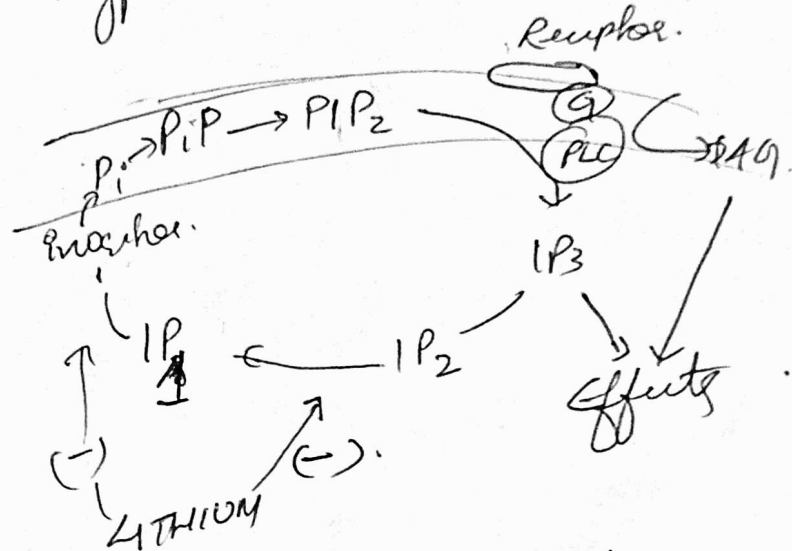
→ Standard antimania & mood stabilizing drug
prescribed for

- Lithium carbonate
- Lithium chloride
- Lithium citrate

- Mood stabilizers
- Antimanic
- Antidepressant
- Suicide protection

MOA

is inhibitor and merges in hyperactive neurons.



↓ Noradrenergic activity.

Pharmacological actions

CNS -

- No A/C effects.
- Neither sedative nor euphoric.
- On chronic use → mood stabilizer.
- suppresses the episodes gradually
- Normalise the reduced sleeping time.

Other actions.

- Diabetic neuropathy like action.
- Insulin like action.
- ↑ leukocyte count
- ↑ thyroxine secretion.

P.K

- almost complete oral absorption
- Distributes in ECF & Total body water
- No plasma protein binding
- Not metabolised.
- Volume of distribution
- 0.8 L/kg

- elimination $t_{1/2} \rightarrow 24$ hours
- 80% reabsorbed → proximal convoluted tubule
- Renal clearance → 1/5 of creatinine clearance
- Narrow safety margin
- Dose ÷ dose 2-3 hrs
- Excreted in sweat, saliva, breast milk

Safety Margins

Effective therapeutic level
0.6 - 1.5 mEq/L.

4% mania → 1.0 - 1.5 mEq/L.

Prophylaxis → 0.6 - 1.0 mEq/L.

Toxicity → > 1.5 mEq/L.

Charg. starting dose 600mg/day.

1. Acute Mania.

First → atypical antipsychotic w/ or w/o B2D.

After control :- start Lithium. Maintenance Rx 6-12 months.

② Prophylaxis in bipolar D

③ Recurrent unipolar depression. antidepressants + lithium.

- Recurrent neuropsychiatric illness
- 4. cluster headache
- 5. relevant to antidepressants
- 6. cancer chemotherapy
- leukopenia & agranulocytosis
- + Syndrome of inappropriate ADH secretion

A/E. CAS → encephalopathy, ataxia, slurred speech, sinus.

GI → Nausea, V, mild D
Renal effect → polyuria, renal D.
Myoid → hypothyroidism, hypercalcaemia, wt gain.

ECG → flattening of T wave
sinus bradycardia, AV block.
Skin → dermatitis, acne vulgaris
metabolic faults, leucocytosis.

Lithium Toxicity.

N, V, D, coarse tremors, ataxia, cerebellar coma

Management

Symptomatic t/x, No sp. antidote
osm. diuretics + sodium bicarb inf.

Hospitalisation - > 2 mEq/L.

hemodialysis > 4 mEq/L.

C/E. Pregnancy → Eb.
maternal lithium.

D/ Diuretics → ↑ Li
NSAIDs, Tekamycin, ACEI → Li toxicity
Sulfonylurea, insulin → hypoglycaemia
Succinyl choline, pancreatitis → prolong
Neurolytics → Tremors, rigidity, myoclonus
Alternatives → SV, Lamotrigine, carbamazepine, atypical antipsychotics