

TABLE 5-13 Mood-Stabilizing Agents

Agents	Initial Dose (Dosing Range), mg	Therapeutic Consideration
Standard Agents		
Lithium carbonate and citrate (Lithobid): 150-, 300-, and 600-mg tablets	300–600 (600–2400) (divided doses)	<ul style="list-style-type: none"> Before use, check creatinine, BUN, TSH, electrolytes, ECG (age >50 years), body weight Adjust for acute trough levels of 0.8–1.2 mEq/L with maintenance levels of 0.50–0.75 mEq/L Two or three times a year, recheck Li, electrolytes, TSH, CBC, ECG, creatinine; also check dose-changes, adding drugs, or suspected toxicity (may include creatinine clearance and urine osmolality)
Valproate (Depakote, ER): 125-, 250-, and 500-mg tablets and oral suspension	250–500 (1200–1500)	<ul style="list-style-type: none"> Hepatic failure risk factors: infants, multiple anticonvulsants, higher doses, dementia Follow CBC, especially in the early months Dose using ≤ 10–20 mg/kg/day with a goal blood level of 45–125 $\mu\text{g/mL}$
Carbamazepine (Tegretol): 100-, 200-, and 400-mg tablets oral suspension	200–600 (400–1200) (divided doses)	<ul style="list-style-type: none"> Before use, check Na, CBC, BUN, creatinine, LFTs, TSH, weight Follow CBC and Na every 2–4 wks for 8 wk and then every 3–6 mo Follow BUN, creatinine, LFTs, and TSH every 6–12 mo
Lamotrigine (Lamictal): 2-, 5-, 25-, 100-, 150-, and 200-mg tablets	12.5–25 (200–300)	<ul style="list-style-type: none"> Must be titrated slowly because of concern for Stevens-Johnson syndrome Avoid new foods and medicines Watch for any rash
Non-FDA-approved Agents		
Topiramate (Topamax): 15-, 25-, 100-, and 200-mg tablets	25–50 (50–300) (adjunctive)	<ul style="list-style-type: none"> Check baseline and occasional bicarbonate (non-anion gap metabolic acidosis) Watch for sedation, weight loss, confusion, kidney stones
Gabapentin (Neurontin): 100-, 300-, 400-, 600-, and 800-mg tablets	300–600 (800–2400) (divided doses)	<ul style="list-style-type: none"> Watch for dizziness, drowsiness, peripheral edema, toxicity in renal impairment

BUN, blood urea nitrogen; CBC, complete blood count; ECG, electrocardiography; FDA, Food and Drug Administration; LFT, liver function test; Li, lithium carbonate; TSH, thyroid-stimulating hormone.

TABLE 5-21 Modern (Atypical) Antipsychotics

Medication (Trade Name) and Formulations	Initial Dose (Dosing Range, mg/day)	Cost per Month (Average Dose)
Aripiprazole (Abilify): 2-, 5-, 10-, 15-, 20-, and 30-mg tablets and 1-mg/mL liquid	10–50 (2–30)	\$393 (15 mg/day)
Clozapine (Clozaril): 25-, 50-, 100-, and 200-mg tablets	12.5–25 (25–800)	Generic: \$303 (300 mg/day) Brand: \$492 (300 mg/day)
Olanzapine (Zyprexa, IM; Zydys): 2.5-, 5-, 7.5-, 10-, and 15-mg tablets; Zydys: 5-, 10-, 15-, and 20-mg tablets	5–10 (2.5–30)	Oral: \$347 (10 mg/day) Zydys: \$405 (10 mg/day)
Paliperidone (Invega): 3-, 6-, 9-, and 12-mg tablets	3–6 (6–12)	\$351 (6 mg/day)
Risperidone (Risperdal, Consta, Risperdal M-disintegrating tabs): 0.25-, 0.5-, 2-, 3-, and 4-mg tablets; Consta: 12.5-, 25-, 37.5-, and 50-mg IM	2–4 (4–10) 25–50 mg IM 2–6 mg PO QD	Oral: \$375 (4 mg/day) M: \$444 (4 mg/day) Consta: \$440 (25 mg/day q2wk)
Quetiapine (Seroquel): 25-, 100-, 200-, and 300-mg tablets	25–50 (50–800)	\$230 (200 mg/day)
Ziprasidone (Geodon): 20-, 40-, 60-, and 80-mg tablets	20–40 (40–160)	\$331 (40 mg/day)

IM, intramuscular; QD, every day.

June 2008 average cost from online pharmacies.

(continued)

- All antipsychotics are category C (some animal studies show adverse effects, but no controlled studies in humans are available) or D (there is evidence of risk to human fetuses, but the potential benefits may justify the risk)

Geriatrics

- Increased mortality (cerebrovascular accident [CVA], myocardial infarction [MI]) with dementia-related-psychosis has been associated with older and newer agents

Pediatrics

- Few antipsychotics are approved for patients younger than age 12 years; the benefits often nonspecific or unclear; there are severe risks of weight gain and metabolic syndrome

Mood Stabilizers

- Used to treat acute mania and to prevent relapse of manic episodes.
- Lithium
- Anticonvulsants
 - Valproic Acid (Depakote)
 - Carbamazepine (Tegretol)
 - Lamotrigine (Lamictal)
 - All of the anticonvulsants are NOT approved for the treatment of Bipolar Disorder!!!
 - » Gabapentin (Neurontin)- NO
 - » Topiramate (Topamax)- NO
 - » Leviteracetem (Keppra)- NO

Lithium

- Alters neuronal sodium transport
- Secreted by the kidney
- Onset of action is 5-7 days.
- Serum therapeutic range: 0.7-1.2
 - Toxic >1.5
 - Lethal >2.0
 - Narrow therapeutic window
- Many side effects
- Need to regularly monitor:
 - Serum lithium levels
 - Thyroid function tests
 - Kidney function (GFR)

Increase Lithium levels

- Dehydration
- Salt Deprivation
- Impaired Renal Function
- Diuretics
- Ace Inhibitors

Decrease Lithium levels

- Caffeine
- Carbonic Anhydrase Inhibitors (acetazolamide)
- Mannitol
- Theophylline

Side Effects of Lithium

Non-toxic side effects	Toxic side effects
Tremor	AVC
Sedation	Chorea tremors
Ataxia	Convulsions
Thirst	Death
Polyuria	
Weight gain	
Thyroid enlargement	
Hypothyroidism	
Nephrogenic diabetes insipidus	

** ALSO CAN CAUSE NEURAL TUBE DEFECTS AND EBSTEIN'S ANOMALY IF GIVEN TO PREGNANT WOMEN IN FIRST TRIMESTER

Valproic Acid (Depakote)

- Anticonvulsant
- Increase CNS levels of GABA
- Useful in treating mixed and manic episodes.
- Useful in rapid-cycling bipolar disorder.
- What to monitor
 - LFT's
 - CBC
 - Serum Valproate
 - UCG if woman of child-bearing age

Valproic Acid

Side Effects

- Sedation
- Weight Gain
- Alopecia
- Hemorrhagic Pancreatitis
- Hepatotoxicity
- Thrombocytopenia
- Neural Tube Defects

Lamotrigine (Lamictal)

- Anticonvulsant
- Useful in treating bipolar depression.
- Start low, go slow
 - Start at 25mg per day and increase by 25mg per week.

