

H1-Antihistamines Therapeutic Cheat Sheet (Part 1)

COMPILED BY: NATHANIEL LAMPLEY, MD • REVIEWED BY: ADAM FRIEDMAN, MD

TRADE NAME^{1,2}

- > Cetirizine: Zyrtec®¹
- > Loratadine: Claritin®²

MECHANISM OF ACTION^{1,3,4}

- > Predominantly act as peripheral histamine H1-receptor antagonists that inhibit histamine-mediated responses including vasodilation, increased vascular permeability, and sensory nerve stimulation.
- > Minimal central nervous system penetration due to low blood-brain barrier permeability, resulting in lower risk of sedation compared to first generation H1-antihistamines.

FDA-APPROVED FOR^{1,2,3}

- > Seasonal Allergic Rhinitis: relief of symptoms associated with seasonal allergic rhinitis in adults and children 2 years of age and older.
- > Perennial Allergic Rhinitis: relief of symptoms associated with perennial allergic rhinitis in adults and children 6 months of age and older (≥2 years for loratadine)
- > Chronic Urticaria: treatment of the uncomplicated skin manifestations of chronic spontaneous urticaria in adults and children 6 months of age and older (≥2 years for loratadine)

OFF-LABEL DERMATOLOGIC USES

- > Mast Cell Activation Disorder⁵
- > Psoriasis⁶
- > Lichen Planopilaris⁷
- > Erythromelalgia⁸
- > Eosinophilic Cellulitis⁹
- > Eosinophilic Pustular Folliculitis⁸
- > Vesiculobullous Darier Disease¹⁰
- > Atopic Dermatitis¹¹
- > Alopecia Areata⁸
- > Androgenic Alopecia¹²
- > Eosinophilic Fasciitis⁸

DOSING^{1,2,3,13}

- > Cetirizine:
 - > Adults and children ≥6 years: 5-10 mg once daily
 - > Children 6 months-5 years: 2.5 mg once daily (may increase to 5 mg/day in select patients)
- > Loratadine:
 - > Adults and children ≥6 years: 10 mg once daily
 - > Children 2-5 years: 5 mg once daily
- > Dose adjustment: Recommended in patients with renal and/or hepatic impairment
- > Up-dosing (guideline-supported, off label): In patients with chronic urticaria who remain symptomatic, second generation H1 antihistamines may be up-titrated up to 4 times the standard daily dose under practitioner supervision.

WARNINGS AND PRECAUTIONS^{1,3,4}

- > Somnolence may occur: caution with driving or operating potentially dangerous machinery
- > Concomitant use with alcohol or CNS depressants should be avoided as this may cause additional reduction in alertness or CNS performance.
- > Patients with hepatic and/or renal impairment should use caution.
- > Use caution in elderly patients due to possible decreased renal function.

SIDE EFFECTS^{1,2,3}

- > Primary side effects include somnolence, fatigue, dry mouth, dizziness, headache, and pharyngitis. Somnolence appears to be a dose-dependent effect and less common in loratadine.
- > Uncommon side effects include abdominal pain, pharyngitis, cough, nausea, hypersensitivity reactions, hepatic transaminase elevation, severe hypotension, anaphylaxis, hemolytic anemia, thrombocytopenia, orofacial dyskinesia, cholestasis, glomerulonephritis, hepatitis, agitation, and insomnia.

DRUG INTERACTIONS^{1,3,4}

- > CNS depressants: concurrent use with CNS depressants may increase the risk of sedation.
- > Pitolisant: concurrent use may reduce therapeutic efficacy of pitolisant (pharmacodynamic antagonism at histamine pathways).
- > Cetirizine:
 - > P-glycoprotein interactions (e.g., verapamil, erdafitinib): concurrent cetirizine use may alter cetirizine CNS exposure and increase antihistaminic effects.
- > Loratadine:
 - > CYP450-mediated interactions: Loratadine is primarily metabolized by CYP3A4 and CYP2D6; CYP3A4 inhibitors may increase loratadine plasma concentrations

CONTRAINDICATIONS^{1,2}

- > Absolute contraindications include patients with a known hypersensitivity to the agent or any of its ingredients.

PREGNANCY AND BREASTFEEDING

- > Pregnancy: Classified as a former FDA Pregnancy Category B (animal studies negative; no clear human risk), however the American College of Obstetricians and Gynecologists and the American College of Allergy, Asthma, and Immunology (ACOG-ACAAI) recommends as an acceptable option for pregnant patients who require antihistamine therapy; however, it should be used during pregnancy only when necessary³
- > Breastfeeding: Generally considered compatible with breastfeeding at standard doses. However, prolonged use or higher doses may increase the risk of infant drowsiness^{3,4}