ASTHMA TREATMENTS: INHALATIONS (Part 1 of 2)

Generic	Brand & Company	Strength	Form	Dosage
ANTICHOLINERGIC				
ipratropium bromide	**–** *various*	0.02%	soln	**Children: Not recommended.** **Adults:** 500mcg orally by nebulization 3–4 times daily; separate doses by 6–8hrs
	Atrovent HFA *Boehringer Ingelheim*	17mcg	MDI	**Children: Not established.** **Adults:** 2 inh 4 times daily; max 12 inh/day
β_2-AGONIST				
albuterol sulfate	**–** *various*	0.5%	soln	**Children:** Use other forms **Adults:** Use nebulizer. 2.5mg 3–4 times daily.
		0.083%	soln	*Asthma:* **<4yrs: Not recommended.** **≥4yrs:** 2 inh every 4–6hrs as needed; 1 inh every 4hrs may suffice *EIB:* 2 inh 15min before exercise
		90mcg	MDI	
	ProAir HFA *Teva*	90mcg	MDA	*Asthma:* **<4yrs: Not established.** **≥4yrs:** 2 inh every 4–6hrs; 1 inh every 4hrs may suffice *EIB Prevention:* **≥4yrs:** 2 inh 15–30min before exercise
	Proventil HFA *Merck*	90mcg	MDA	
	Ventolin HFA *GlaxoSmithKline*	90mcg	MDA	*Asthma:* **<4yrs: Not recommended.** **≥4yrs:** 2 inh every 4–6hrs; 1 inh every 4hrs may suffice *EIB Prevention:* **≥4yrs:** 2 inh 15–30min before exercise
levalbuterol HCl	**Xopenex** *Sunovion*	0.31mg/3mL, 0.63mg/3mL, 1.25mg/3mL	soln	**<6yrs: Not recommended.** **6–11yrs:** 0.31mg by nebulization 3 times daily; max 0.63mg 3 times daily **>12yrs:** Initially 0.63mg 3 times daily at 6–8hr intervals; may increase to 1.25mg 3 times daily.
	Xopenex Concentrate *Sunovion*	1.25mg/0.5mL	soln	
levalbuterol tartrate	**Xopenex HFA** *Sunovion*	45mcg	MDI	**<4yrs: Not established.** **≥4yrs:** 2 inh every 4–6hrs; 1 inh every 4hrs may suffice
metaproterenol sulfate	**–** *various*	5%	soln	**<6yrs: Not recommended.** **6–12yrs:** Use nebulizer. 0.1–0.2mL 3–4 times daily, up to every 4hrs. **≥12yrs:** 3–4 times daily (see literature).
		0.4%, 0.6%	soln	**Children: Not recommended.** **Adults:** Use intermittent positive pressure breathing apparatus (IPPB): 2.5mL 3–4 times daily; up to every 4hrs
LONG-ACTING β_2-AGONIST				
formoterol fumarate	**Foradil Aerolizer** *Merck*	12mcg	dry pwd	*Asthma:* **<5yrs: Not recommended.** **≥5yrs:** 1 inh every 12hrs; max 2 doses/day *EIB Prevention:* **≥5yrs:** 1 inh at least 15min before exercise
salmeterol xinafoate	**Serevent Diskus** *GlaxoSmithKline*	50mcg	dry pwd	*Asthma:* **<4yrs: Not recommended.** **≥4yrs:** 1 inh twice daily *EIB Prevention:* **≥4yrs:** 1 inh at least 30min before exercise; max 2 doses/day
MAST CELL STABILIZER				
cromolyn sodium	**–** *various*	20mg/2mL	soln	**<2yrs: Not recommended.** **≥2yrs:** Use nebulizer. 20mg 4 times a day.
STEROID				
beclomethasone diproprionate	**Qvar** *Teva*	40mcg, 80mcg	MDI	**<5yrs: Not recommended.** **≥5–11yrs:** Initially 40mcg twice daily; max 80mcg twice daily **Adults:** *Previously on bronchodilators alone:* Initially 40–80mcg twice daily. *Previously on inhaled corticosteroids:* Initially 40–160mcg twice daily. Max 320mcg twice daily.
budesonide	**Pulmicort Flexhaler** *AstraZeneca*	90mcg, 180mcg	dry pwd	**<6yrs: Not recommended.** **6–17yrs:** Initially 180mcg twice daily; may start at 360mcg twice daily; max 360mcg twice daily **≥18yrs:** Initially 360mcg twice daily; 180mcg twice daily may suffice; max 720mcg twice daily
	Pulmicort Respules *AstraZeneca*	0.25mg/2mL, 0.5mg/2mL, 1mg/2mL	susp	**<6mos: Not recommended.** **6–12mos: Not established.** **12mos–8yrs:** *Previously on bronchodilators alone:* 0.5mg once daily or 0.25mg twice daily. *Previously on inhaled corticosteroids:* 0.5mg once daily or 0.25mg twice daily; max 1mg/day. *Previously on oral corticosteroids:* 0.5mg twice daily or 1mg once daily.

(continued)

ASTHMA TREATMENTS: INHALATIONS (Part 2 of 2)

Generic	Brand & Company	Strength	Form	Dosage
STEROID *(continued)*				
ciclesonide	**Alvesco** *Sunovion*	80mcg, 160mcg	MDA	**<12yrs: Not recommended.** **≥12yrs:** *Previously on bronchodilators alone:* initially 80mcg twice daily, max 160mcg twice daily. *Previously on inhaled corticosteroids:* Initially 80mcg twice daily; max 320mcg twice daily. *Previously on oral corticosteroids (see literature):* 320mcg twice daily.
fluticasone propionate	**Flovent Diskus** *GlaxoSmithKline*	50mcg, 100mcg, 250mcg	dry pwd	**<4yrs: Not recommended.** **4–11yrs:** *Previously on bronchodilators alone or on inhaled corticosteroids:* Initially 50mcg twice daily; max 100mcg twice daily. **≥11yrs:** *Previously on bronchodilators alone:* initially 100mcg twice daily; max 500mcg twice daily. *Previously on inhaled corticosteroids:* initially 100–250mcg twice daily; max 500mcg twice daily. *Previously on oral corticosteroids* (wean gradually)*:* initially 500–1000mcg twice daily; max 1000mcg twice daily.
	Flovent HFA *GlaxoSmithKline*	44mcg, 110mcg, 220mcg	MDI	**<4yrs: Not recommended.** **4–11yrs:** 88 mcg twice daily. **≥12yrs:** *Previously on bronchodilators alone:* Initially 88mcg twice daily; max 440mcg twice daily. *Previously on inhaled steroids:* Initially 88–220mcg twice daily; max 440mcg twice daily. *Previously on oral steroids:* Initially 440mcg twice daily; max 880mcg twice daily.
mometasone furoate	**Asmanex Twisthaler** *Merck*	110mcg, 220mcg	dry pwd	**<4yrs: Not recommended.** **4–11yrs:** 110mcg once in PM; max 110mcg/day. **≥12yrs:** *Previously on bronchodilators alone or inhaled steroids:* Initially 220mcg once in PM; max 440mcg/day (as 2 inh once daily or 1 inh twice daily). *Previously on oral steroids:* Initially 440mcg twice daily; max 880mcg/day.
STEROID/LONG-ACTING β_2-AGONIST				
budesonide/ formoterol fumarate dihydrate	**Symbicort** *AstraZeneca*	80/4.5, 160/4.5 (mcg)	MDI	**≥12yrs:** 2 inh twice daily; max 160/4.5 twice daily
fluticasone propionate/ salmeterol	**Advair Diskus** *GlaxoSmithKline*	100/50, 250/50, 500/50 (mcg)	dry pwd	**<4yrs: Not recommended.** **4–11yrs:** 1 inh of 100/50 twice daily **≥12yrs:** 1 inh of 100/50, 250/50, or 500/50 twice daily; max 1 inh of 500/50 twice daily
	Advair HFA *GlaxoSmithKline*	45/21, 115/21, 230/21 (mcg)	MDI	**<12yrs: Not recommended.** **≥12yrs:** 2 inh of 45/21, 115/21, or 230/21 twice daily; max 2 inh 230/21 twice daily
mometasone furoate/ formoterol fumarate	**Dulera** *Merck*	100/5, 200/5 (mcg)	MDI	**<12yrs: Not recommended.** **≥12yrs:** *Previously on medium dose of steroid:* Use 100/5. *Previously on high dose of steroid:* Use 200/5. *Both:* 2 inh twice daily.

NOTES

Key: dry pwd = dry powder for inhalation; EIB = exercise induced bronchospasm; MDI = metered-dose inhaler; MDA = metered dose aerosol; soln = solution for inhalation; susp = suspension for inhalation (Rev. 3/2014)