Cheatography

# Pulmonary Rotation ACNP Cheat Sheet

by xkissmekatex (kissmekate) via cheatography.com/33594/cs/10482/

## Asthma (Obstructive Disease)

| | |
|---|---|
| Definition | • **Inflammatory** condition of the airways<br>• **hyperresponsiveness** leading to **airway edema + bronchoconstriction**<br>• Recurrent/intermittent episodes of wheezing, shortness of breath, and/or cough<br>• Usually **reversible** either spontaneously or with treatment. |
| Causes | Atopy (**IgE mediated**) + Environmental triggers (allergens, irritants, chemicals, respiratory infections, physical stress, and emotional stress). |
| Diagnosis | **Reversible bronchoconstriction** on own or with bronchodilator and a history. **Consider challenge test** |
| Severity | Intermittent, mild persistent, moderate persistent, and severe persistent |
| Relationships | • GERD, Allergic rhinitis<br>• Worsened by Allergic bronchopulmonary aspergillosis (ABPA), Obstructive sleep apnea-hypopnea (OSA), Stress |

## TESTS

| | |
|---|---|
| PFT's | • Normal if no active disease.<br>• **FEV1/FVC < 70%**<br>• Decreased expiratory flow<br>• **Significant response to beta2-agonist**.<br>• Normal or increased TLC (due to hyperinflation).<br>• Normal or reduced VC.<br>• DLCO is normal. |

## TESTS (cont)

| | |
|---|---|
| Exercise-induced bronchospasm | Decrease in FEV1 of >10% on a treadmill or a stationary bicycle. |
| CXR | Normal in mild cases. **Severe asthma shows hyperinflation**. |
| Arterial Blood Gas | • Indicated in respiratory distress.<br>• Hypocarbia from hyperventilation.<br>• Hypoxemia may be present.<br>• If CO2 level is normal or high sign that the patient is decompensating due to fatigue or severe airway obstruction and **intubation** may be required. |
| Challenge Test | •Methacholine challenge, histamine challenge, and thermal (cold air). Principle of nonspecific hyperirritability.<br>•**Must both tighten up with the challenge and loosen up with subsequent bronchodilators**.<br>• Response to short-acting bronchodilator **(increase in the FEV1 > 12% and increase of 200 mL**). |

## Treatment

| | |
|---|---|
| Rescue | SABA (albuterol) |
| Quick relief (acute, mild, intermittent disease) | • Short-acting beta2-agonists (SABAs)<br>• Systemic corticosteroids<br>• Anticholinergics |
| Long-Term control | • **Inhaled corticosteroids** (ICS; most potent and most effective)<br>• Long-acting beta2-agonists (LABAs)<br>• Mast-cell stabilizers (cromolyn sodium +nedocromil)<br>• Leukotriene modifiers<br>• Methylxanthines (theophylline) • Immunomodulators (omalizumab = anti-IgE) |

By **xkissmekatex** (kissmekate)
cheatography.com/kissmekate/

Published 13th January, 2017.
Last updated 16th January, 2017.

## Treatment (cont)

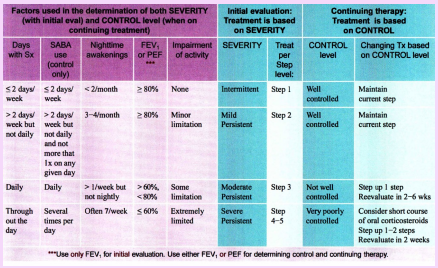
| | |
|---|---|
| Acute Exacerbation | • Inhaled B agonist and ipratropium via nebulizer or MDI. Assess response clinically and with peak flow.<br>• IV or oral corticosteroids, then taper when improvement occurs.<br>• Third-line agents include IV magnesium, which helps with bronchospasm in severe refractory cases.<br>• Supplemental oxygen to keep Osat>90%. Antibiotics if necessary. Intubation for respiratory failure. |
| Mild Intermittent | • Symptoms <2 times per week, nighttime awakenings <2x per month.<br>• Normal baseline FEV1 and FEV1/FVC.<br>• Needs no long-term control medications, just short acting beta agonist (albuterol). |
| Mild Persistent | • Symptoms >2 times per week but not every day. 3-4 nighttime awakenings per month, minor limitations on activities.<br>• Normal PFTs.<br>• **Low dose inhaled corticosteroid** indicated with PRN albuterol inhaler. |

## Treatment (cont)

| | |
|---|---|
| Moderate Persistent | • **Daily symptoms** with frequent exacerbations.<br>• FEV1 is 60-80% of expected.<br>• Daily inhaled low dose corticosteroid, PRN albuterol inhaler, and LABA inhaler. +/- cromolyn/methylxanthine/antileukotriene. |
| Severe Persistent | • Continual symptoms with frequent exacerbations and **limited physical activity**.<br>• **FEV1 <60% of predicted**.<br>• Daily high dose inhaled corticosteroid, PRN albuterol, and long-acting beta agonists. +/- methylxanthine and systemic corticosteroids. |

.

## Treatment and Maintenance



| Factors used in the determination of both SEVERITY (with initial eval) and CONTROL level (when on continuing treatment) | | | | | Initial evaluation: Treatment is based on SEVERITY | | Continuing therapy: Treatment is based on CONTROL | |
|---|---|---|---|---|---|---|---|---|
| Days with Sx | SABA use (control only) | Nighttime awakenings | FEV$_1$ or PEF *** | Impairment of activity | SEVERITY | Treat per Step level: | CONTROL level | Changing Tx based on CONTROL level |
| ≤ 2 days/ week | ≤ 2 days/ week | < 2/month | ≥ 80% | None | Intermittent | Step 1 | Well controlled | Maintain current step |
| > 2 days/ week but not daily | > 2 days/ week but not daily and not more that 1x on any given day | 3–4/month | ≥ 80% | Minor limitation | Mild Persistent | Step 2 | Well controlled | Maintain current step |
| Daily | Daily | > 1/week but not nightly | > 60%, < 80% | Some limitation | Moderate Persistent | Step 3 | Not well controlled | Step up 1 step Reevaluate in 2–6 wks |
| Throughout the day | Several times per day | Often 7/week | ≤ 60% | Extremely limited | Severe Persistent | Step 4–5 | Very poorly controlled | Consider short course of oral corticosteroids Step up 1–2 steps Reevaluate in 2 weeks |

***Use only FEV$_1$ for initial evaluation. Use either FEV$_1$ or PEF for determining control and continuing therapy.

.

## Differential Diagnosis of Wheezing

• CHF: due to edema of airways and congestion of bronchial mucosa.
• COPD: inflamed airways may be narrowed or bronchospasm may be present.
• **Asthma: most common cause**.
• Cardiomyopathy/Pericarditis: can lead to edema around the bronchi.
• Lung Cancer: due to obstruction of airways (central tumor or mediastinal invasion).

.