

Asthma in Adults: PBL

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Learning Objectives

1. Reviewed diagnosis and assessment of asthma.
2. Discussed treatment of stable asthma.
3. Treated asthma exacerbations
4. Evaluated asthma in pregnancy



Audience Engagement System

Step 1: Home screen with navigation icons (Home, Search, My Profile, My Courses, My Progress, My Account, My Settings, My Notifications, My Support, My Feedback).

Step 2: Course list for 'CME011 Asthma Exacerbations: Unchain My Heart'. The list includes course details such as 'CME011 Asthma Exacerbations: Unchain My Heart', 'CME011 Asthma Exacerbations: Unchain My Heart', 'CME011 Asthma Exacerbations: Unchain My Heart', 'CME011 Asthma Exacerbations: Unchain My Heart', 'CME011 Asthma Exacerbations: Unchain My Heart', 'CME011 Asthma Exacerbations: Unchain My Heart', 'CME011 Asthma Exacerbations: Unchain My Heart', 'CME011 Asthma Exacerbations: Unchain My Heart', 'CME011 Asthma Exacerbations: Unchain My Heart', 'CME011 Asthma Exacerbations: Unchain My Heart'.

Step 3: Course details for 'CME011 Asthma Exacerbations: Unchain My Heart'. The details include course title, description, duration, and a 'View Course' button.



Practice Recommendations

- No changes in current NHLBI asthma guideline
- New EIB guideline favors SABA's not LABA's
- Symptom-based ICS or SiT use may be "OK"
- Careful using LABA's (but don't stop them!)
- Don't use LRA's as monotherapy
- Asthma exacerbations tx same in pregnancy!

FMX

Chief Complaint

"Wheezing with exercise and allergies. Plus I cough a lot at night."



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History of Present Illness

"Jane": 24 year old female

- Presents today for her WWE/pap
- Reports cough keeping her awake at night
- Short of breath/wheezing with exercise
- Allergies this summer were really bad

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Past Medical History

- History of childhood asthma: "grew out of it"
- Allergic rhinitis

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Medications, Allergies

- Fluticasone nasal spray QD
- Fexofenadine 180mg QD
- Etonogestrel subdermal implant
- NKDA
- Environmental allergies year round, but worst in the spring/summer
- Bothered by smoke, animal dander

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Immunizations

- Declines flu vaccine this season
- Completed HPV vaccine series

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Family History

- Father: HTN, diabetes
- Mother: asthma, allergies
- Brother: no issues

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Social History

- Single, has female roommate, 1 cat, 1 dog
- Drinks 2-3 beers on the weekends
- Smokes “only when out with friends”
- Denies other drugs/substances
- In monogamous relationship with fiancée

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Review of Systems

- Denies:
 - Fever
 - Chills/sweats
 - Weight loss
 - Inhaler use
 - Hospitalization/intubation for breathing problems

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Physical Examination

- VS: 98.9, 60, 115/70, 18, 99%, BMI 24
- Gen: alert, oriented, no acute distress
- HEENT: pale swollen turbinates, post nasal drip
- CV: RRR, no M/R/G
- Lungs: CTA x 2, rare end exp wheeze bilaterally
- Abd: nl BS, NT, ND, no TTP, masses
- Pelvic/pap: wnl

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What Is Your Differential Diagnosis?

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What Labs/Rads/Work-up?

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Laboratory/Radiology/Work-up

- Pap smear: wnl
- CXR: no acute disease
- Spirometry:
 - FVC: 90% predicted
 - FEV₁: 70% predicted
 - Reversibility: 15%

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Does This Patient Have Asthma?

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Asthma Diagnosis

- Reversibility: 12% in baseline FEV1 or 10% of percent predicted FEV1
- Methacholine challenge most sensitive test
- Positive: decrease in FEV1 > 20% at 8 mg/mL
- Decreased FEV1/FVC suggestive of dz
- Normal spirometry does not exclude asthma!

FMX

How Would You Treat Jane?

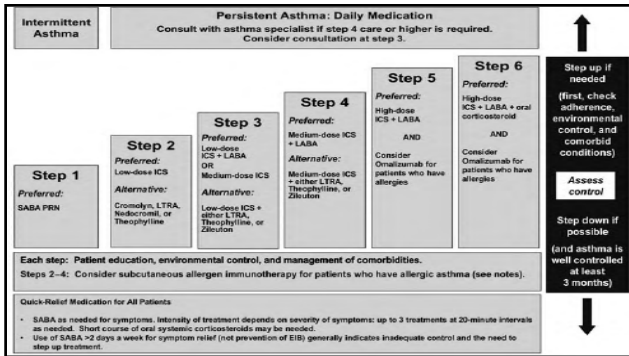
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Chronic Asthma Treatment

- Stepwise treatment of categories
 - SABA only as needed for all categories
 - ICS preferred controller
 - LABA's preferred add-on agent after ICS
 - LRA's acceptable controller

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Components of Severity		Classification of Asthma Severity ≥12 years of age			
		Intermittent	Mild	Persistent	Severe
Impairment	Symptoms	≤2 days/week	>2 days/week but not daily	Daily	Throughout the day
	Nighttime awakenings	≤2x/month	3-4x/month	>1x/week but not nightly	Often 7x/week
	Short-acting beta ₂ -agonist use for symptom control (not prevention of EIB)	≤2 days/week	>2 days/week but not daily, and not more than 1x on any day	Daily	Several times per day
Lung function	Normal FEV ₁ /FVC	None	Minor limitation	Some limitation	Extremely limited
	Interference w/ normal activity	• Normal FEV ₁ between exacerbations • FEV ₁ >80% predicted • FEV ₁ /FVC normal	• FEV ₁ >60% predicted • FEV ₁ /FVC normal	• FEV ₁ >50% but <80% predicted • FEV ₁ /FVC reduced >5%	• FEV ₁ <50% predicted • FEV ₁ /FVC reduced >5%
Risk	Exacerbations requiring oral systemic corticosteroids	0-1/year (see note)	≥2/year (see note)		
		Consider severity and interval since last exacerbation. Frequency and severity may fluctuate over time for patients in any severity category. Relative annual risk of exacerbations may be related to FEV ₁ .			
Recommended Step for Initiating Treatment (See "Stepwise Approach for Managing Asthma" for treatment steps.)		Step 1	Step 2	Step 3	Step 4 or >
		In 2-6 weeks, evaluate level of asthma control that is achieved and adjust therapy accordingly.			



Jane Returns 6 Months Later...

- Asthma interfering with her job
- SOB several times per week
- Several nights past month couldn't sleep
- Using her SABA once per day x 2 months
- She can't find her asthma action plan

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Is Jane's Asthma Under Control?

What Is Her Asthma Control Test (ACT) Score?

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1. In the past 4 weeks, how much of the time did your asthma keep you from getting as much done at work, school or at home?	SCORE					
All of the time [1]	More than once a day [1]	Once a day [2]	3 to 6 times a week [3]	A little of the time [4]	None of the time [5]
2. During the past 4 weeks, how often have you had shortness of breath?						
4 or more nights a week [1]	2 or 3 nights a week [2]	Once a week [3]	Once or twice a week [4]	Not at all [5]	
3. During the past 4 weeks, how often did your asthma symptoms (wheezing, coughing, shortness of breath, chest tightness or pain) wake you up at night or earlier than usual in the morning?						
3 or more times per day [1]	1 or 2 times per day [2]	2 or 3 times per week [3]	Once a week or less [4]	Not at all [5]	
4. During the past 4 weeks, how often have you used your rescue inhaler or nebulizer medication (such as albuterol)?						
Not controlled at all [1]	Poorly controlled [2]	Somewhat controlled [3]	Well controlled [4]	Completely controlled [5]	

If your score is 19 or less, your asthma may not be as well controlled as it could be, no matter what your score is, share the results with your healthcare provider. TOTAL:

Is Jane's Asthma Under Control?

What Is Her Asthma Control Test (ACT) Score?

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What Medication(s) Would You Prescribe Now?

Other Treatments/Recommendations?

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Jane Returns 1 Month Later...

Now Her ACT Score Is
18...What Now?

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Jane Goes to the ER

- 3 days of progressive SOB, wheezing
- Roommate has URI and so does fiancée
- Afebrile, 110, 22, 130/80, 90% RA
- Diffuse wheezing bilaterally
- CXR: no acute disease, hyperexpanded

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How Would You Treat Jane's Asthma Exacerbation?

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ER Management

- Nebulizers no better than MDI's via spacer
- Inhaled mag sulfate: no benefit; stick with IV
- Ketamine showed NO benefit in it's only RCT
- Weak data for IV beta agonists + inhaled
 - NO benefits for adults
 - Limited evidence in children

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ER Management

- ICS in the ER for acute exacerbations
 - Reduced admissions if not treated with oral or IV
 - May reduce admissions when added to systemic
- Increasing ICS as part of an action plan ineffective
- Choice of oral steroid?
 - Prednisone vs. dexamethasone

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Please Write Jane a New Asthma
Action Plan and Explain It to Her!

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1 Year Later...

- Jane has since gotten married!
- She reports that she just found out she is pregnant (confirmed by clinic test)
- Per LMP and US she is 12 weeks
- She is taking PNVs and her subdermal implant was removed 6 months ago

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Would You Make Any Changes to Jane's Medications?

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Asthma and Pregnancy

- Asthma may improve, worsen or stay the same
 - Mild: 12.6% exacerbation/2.3% hospitalization
 - Moderate: 25.7%/6.8%
 - Severe: 51.9%/26.9%
- 15-20% increased risk of complications
 - Mortality, pre-e, preterm delivery, low birth weight
- Monitor peak flows bid +/- spirometry

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Asthma and Pregnancy

- Medication safety
 - Albuterol (C), ICS (B/C), LABA (C), LRA (B), Ipratrop (B)
 - Carboprost (avoid!)
- "Best" data: albuterol, budesonide, salmeterol
- Less data: formoterol, LRA's
- No diff in malformations b/t ICS vs. LABA/ICS
- Acute exacerbations in pregnancy tx'ed the same!

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Asthma Apps

- STAT Asthma
- Asthma Point of Care

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Questions?

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Contact Informaton

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Associated Session

- Asthma in Adults: A Breathless Update

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Interested in More CME on this topic?

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