

Wyoming Drug Utilization Review

Asthma: Exercised-Induced Bronchospasm

Stevi Buck, PharmD

Exercised-induced bronchoconstriction, also known as exercise-induced bronchospasm (EIB), is defined as “a transient narrowing of the airways during or after exercise.”¹ Physical activity is the cause of EIB, with bronchoconstriction occurring within five to ten minutes following the end of activity.² This transient constriction affects between 10 and 15 percent of the population, with

dramatically increased incidence seen in athletes.¹ Approximately 12 percent of the pediatric population experiences EIB.³ Both patients with asthma and those without asthma can experience EIB.³ The presence of EIB in a patient diagnosed with asthma may indicate poor asthma control and a step-up of therapy may be necessary.²

Exercised-induced bronchoconstriction is characterized by nonspecific signs and symptoms, and diagnosis is typically based on patient-reported symptoms.^{1,3} Symptoms include cough, wheeze, shortness of breath, or an inability to keep up with peers.¹⁻⁴ Young children may complain of stomach ache, sore throat, headache, or may appear to be experiencing a prolonged respiratory

illness.⁴ Symptoms are generally exacerbated by dry, cold air.^{1,2} If pulmonary function tests are conducted, at least a 10 percent decline can be seen in FEV₁ or peak flow rate when compared to values obtained before exercise.⁴

Pharmacologic treatment of EIB is typically preventative.^{2,3} Short acting beta₂-agonists (SABA), such as albuterol, can be used prior to exercise to prevent symptoms in both children and adults.² The SABA should be used 15 to 30 minutes before initiation of exercise.⁴ If the SABA is being utilized several times for several days in a row, the patient may experience a partial loss of efficacy.⁴ Inhaled corticosteroids, with or without long acting beta₂-agonists, may be beneficial in patients experiencing tachyphylaxis due to overuse of a SABA.^{2,4} Additionally, some patients may experience relief of symptoms through the use of montelukast, although trials have demonstrated mixed results.³ Theophylline is also beneficial in the treatment of EIB, however, the side effect profile of this medication typically limits its use.²

Nonpharmacologic treatments of EIB are available. A warm up period prior to exercise and a cool down following may help decrease EIB symptoms.³ Increased fitness can also increase the EIB threshold, decreasing symptoms.³ Face masks can also be useful, either to warm air prior to inhalation or to catch moisture expelled and allow for hydration of inhaled air.^{3,4} Environmental factors, including allergens, should also be considered and removed or treated if impacting EIB.²

EIB is a transient airway narrowing brought on by exercise. Preventative measures should be taken to avoid disease symptoms, including the use of a SABA 15 to 30 minutes before activity and incorporating warm-up periods before exercise.

continued on page 3

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P & T Committee Meeting Update

The P&T Committee met for its bimonthly business meeting on August 18, 2011. Highlights of this meeting include:

The Department of Health is in the final stages of negotiating supplemental rebates through the SSDC. The PDL for 2012 will be presented at the November P&T Committee meeting.

CMS is doing a national survey on actual acquisition cost (AAC) and the Office of Pharmacy Services will be conducting a cost of dispensing survey of all Wyoming Medicaid Pharmacy providers to be prepared for any changes to reimbursement that may be necessary.

The following prior authorization criteria were approved:

Long-acting blood pressure medications will be limited to their labeled dosing frequency. Exceptions will be made to prior authorization for electrophysiology and use in akathisia.

The prior authorization criteria for Latuda were amended to allow the drug for women of child-bearing age due to its Pregnancy Category B status.

The prior authorization criteria for Seroquel were amended to allow low doses (<100 mg) to be used in patients with mood disorder who cannot tolerate higher doses.

Atypical antipsychotics will be targeted for dose optimization with the following limitations:

Abilify: Limit to 1 tablet or syringe per day.
Invega: Limit to 1 tablet or syringe per day.
Clozapine: Limit to 100 mg and 25 mg strengths.
Fanapt: Limit to 2 tablets per day.
Geodon: Limit to 2 tablets per day.

Targeted education will be conducted prior to implementing prior authorization criteria for the five atypical antipsychotics listed above.

The following new drugs were reviewed. All will be limited to FDA-labeled indications.

- Incivek
- Victrelis
- Zytiga
- Lazanda (age and quantity limits will also apply per labeling)
- Xarelto
- Brilinta

All proposed prior authorization criteria will be posted for public comment at www.uwyo.edu/DUR. Comments may be sent by email to alewis13@uwyo.edu or by mail to: Wyoming Drug Utilization Review Board, Dept. 3375, 1000 E. University Avenue, Laramie, WY 82071. Comments should be received prior to September 30, 2011.

The next P&T Committee meeting will be held November 17, 2011 in Cheyenne. An agenda will be posted approximately two weeks prior to the meeting.

Upcoming 2011 P & T Committee Meeting

November 17, 2011

Meeting time:
9 am - 3 pm

Location:
Laramie County Community College
CCI 130
Cheyenne, WY

All meeting dates and times
are subject to change.

Guidelines for the Treatment of Hypertension

Aimee Lewis, PharmD, MBA and Maria Kidner, DNP, FNP-C

A recent review of Medicaid drug utilization identified a group of patients who were using clonidine as monotherapy for hypertension.

The seventh report of the Joint National Committee on Prevention, Detection, Evaluation and Treatment of High Blood Pressure (JNC-7) gives the following guidelines in the treatment of hypertension.

- Initial treatment of Stage 1 hypertension (SBP 140 – 159 or DBP 90 – 99): thiazide diuretics for most patients. May also consider ACE inhibitors, ARBs, beta blockers, calcium channel blockers or a combination.
- Initial treatment of Stage 2 hypertension (SBP \geq 160 or DBP \geq 100): combination of two drugs for most (generally thiazide diuretic and ACE inhibitor, ARB, beta blocker, or calcium channel blocker).
- For those with a compelling diagnosis, the following recommendations are made:
 - Heart failure: Diuretic, beta blocker, ACE inhibitor, ARB, or aldosterone antagonist.
 - Post-MI: Beta blocker, ACE inhibitor or aldosterone antagonist.
 - High coronary disease risk: Diuretic, beta blocker, ACE inhibitor, calcium channel blocker
 - Diabetes: Diuretic, beta blocker, ACE inhibitor, ARB, calcium channel blocker
 - Chronic kidney disease: ACE inhibitor, ARB
 - Recurrent stroke prevention: Diuretic, ACE inhibitor
- If the patient is not at goal blood pressure following initial treatment, the clinician should consider optimizing dosages, adding additional drugs or considering consultation with hypertension specialist.

Due to the risk of rebound hypertension associated with clonidine, it should never be used alone or in combination with a beta blocker for the treatment of hypertension.

References

1. The Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure. US Department of Health and Human Services. National Institutes of Health, National Heart, Lung, and Blood Institute. Available at: <http://www.nhlbi.nih.gov/guidelines/hypertension/jnc7full.pdf>. Accessed August 9, 2011.
2. Drug Facts and Comparisons ®. Facts & Comparisons 4.0 Online. Indy (IN): Wolters Kluwer Health Inc.; 2008. Available from: <http://www.online.factsandcomparisons.com>. Accessed: August 9, 2011.

Asthma, continued

Patients who exercise frequently or for long periods of time may benefit from long-acting medications, such as ICSs, alone or in combination with long-acting beta₂-agonists. Adequate therapy should control symptoms and allow for full participation in physical activities.

References

1. Weiss P, Rundell KW. Imitators of exercise-induced bronchoconstriction. *Allergy Asthma Clin Immunol.* 2009;5:7-15.
2. Global Initiative for Asthma. Global strategy for asthma management and prevention – updated 2009. Available from: <http://www.ginasthma.com/Guidelineitem.aspx?i1=2&i2=1&intId=1561>. Accessed on: April 24, 2010.
3. Randolph C. An update on exercise-induced bronchoconstriction with and without asthma. *Pediatr Allergy Immunol.* 2009;9:433-438.
4. Randolph C. Exercise-induced bronchospasm in children. *Clinic Rev Allerg Immunol.* 2008;34:205-216.

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In This Issue

**Asthma: Exercised-Induced Bronchospasm
P & T Committee Meeting Update
Guidelines for the Treatment of Hypertension**

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