

Täiskasvanute astma käsitus esmatasandil

Tõendusmaterjali kokkuvõte

Kliiniline küsimus nr 1b.

Kliinilise küsimuse tekst: **Kas astma kahtlusega patsientidel tuleks diagnoosimiseks kasutada: prooviravi versus SPG+BDT**

Kokkuvõte, sh kriitiliste tulemusnäitajate kaupa:

Otseselt seda küsimust puudutavaid süstemaatilisi ülevaateid, RCT ja võrdlusuuringuid ei leidnud.

Ravijuhendid

Erinevates juhendites diagnoosimise kohta toodud erinevad variandid:

- SPG+BDT ja vajadusel prooviravi (EPR-3 2007)
- SPG+BDT või SPG+prooviravi, mõlemad võrdse eelistusena võrreldes PEF-ga (Canada 2010, GINA-2012)
- **SIGN juhises on teistest juhistest detailsem soovitus:** spirograafia+BDT uuring teha juhul, kui astma diagnoos on keskmise tõenäosusega (*intermediate probability*); kui astma diagnoos on väga tõenäoline (*high probability*), alustada kohe prooviraviga ning bronhodilataator testi mitte teha. Detailsed soovitused ka prooviravi kohta (manustamisviis, annused, kestus: kas 200 µg x2 inhaleeritud beklometasooni või muu GKS ekvivalentes annuses 6-8 nädalat või raske obstruktsiooni korral suukaudne prednisoloon 30 mg päevas 14 päeva). Prooviravi efekti hindamine: otsustuspiiriks $FEV_1\Delta > 400$ ml. Väiksemate FEV_1 muutuste korral hinnata sümptomite paranemist valideeritud instrumendi abil (Tabel 8 lk 23-27 – nt ACQ). Viited selles lõigus: Hunter 2002, Smith 2004.
- Juhendis käsitletud ainult SPG+BDT, prooviravi ei ole üldse käsitletud (ISCI-2012, VA/DoD)
- SPG+BDT ja alati diagnoosi kinnitamiseks prooviravi (GEMA-2009)

Otsistrateegiad

Põhiotsing: "Spirometry"[Mesh] AND "Asthma/diagnosis"[Mesh] AND "Glucocorticoids"[Mesh]
n=24, küsimusele vastavaid uuringuid ei ole

Lisaotsingud:

- "Respiratory Function Tests"[Mesh] AND "Asthma/diagnosis"[Mesh] AND systematic[sb]
n=104, küsimusele vastavaid ei ole
- "Asthma"[Mesh] AND "Spirometry"[Mesh] AND systematic[sb] n=29, mitteasjakohased
- "Asthma/diagnosis"[Mesh] AND "Sensitivity and Specificity"[Mesh] AND "Respiratory Function Tests"[Mesh] AND (systematic[sb] OR Comparative Study[ptyp]) AND "Glucocorticoids"[Mesh] n=0
- "Asthma/diagnosis"[Mesh] AND "Sensitivity and Specificity"[Mesh] AND "Respiratory Function Tests"[Mesh] AND (systematic[sb] OR Comparative Study[ptyp]) AND "Glucocorticoids"[Mesh] n=256, antud küsimusele vastavaid uuringuid ei ole. Muidu huvitavaid viiteid, sh küsimustike kohta.
- Otsingud prooviravi kestuse kohta: "Asthma/diagnosis"[Mesh] AND "treatment trial"n=1 (mitteasjakohane); "Glucocorticoids"[Mesh] AND "Asthma/diagnosis"[Mesh] AND week n=18, asjakohaseid ei ole

Kokkuvõte	Viide kirjandusallikale
Teemakohaseid süstemaatilisi ülevaateid ei leidnud	

Viited ravijuhenditest

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Kokkuvõte (abstrakt või kokkuvõtlikum info)	Viide kirjandusallikale
<p>SIGN juhises toodud väidet kinnitav viide: BDT järgse FEV1 muutuse otsustuspiir > 400 ml</p> <p>DESIGN: Single-center, cross-sectional, observational study. SETTING: Teaching hospital. PATIENTS: Twenty-one healthy control subjects, 69 patients with asthma, and 20 subjects referred to the hospital with a diagnosis of asthma who were found to have alternative explanations for their symptoms (i.e., pseudoasthma).</p>	<p>Hunter CJ, Brightling CE, Woltmann G, Wardlaw AJ, Pavord ID A comparison of the validity of different diagnostic tests in adults with asthma. Chest. 2002 Apr;121(4):1051-7. http://www.ncbi.nlm.nih.gov/pubmed/11948032</p>
<p>SIGN juhise otsistrateegia</p>	<p>http://www.sign.ac.uk/pdf/SIGN101_2003_Diagnosis_search_narrative.pdf</p>

Erinevate testide võrdlused

<p>Diagnosing asthma is not always easy, and there are times when objective tests can be helpful. The extent to which these tests alter the probability of asthma depends on how much more commonly the test result is positive in subjects with asthma compared to healthy subjects and particularly subjects with conditions that are commonly confused with asthma. We set out to compare the sensitivity and specificity of different tests in this setting.</p> <p>DESIGN: Single-center, cross-sectional, observational study.</p> <p>SETTING: Teaching hospital.</p> <p>PATIENTS: Twenty-one healthy control subjects, 69 patients with asthma, and 20 subjects referred to the hospital with a diagnosis of asthma who were found to have alternative explanations for their symptoms (i.e., pseudoasthma).</p> <p>INTERVENTIONS: We measured methacholine airway responsiveness, the maximum within-day peak expiratory flow amplitude mean percentage (derived from twice-daily readings for > 2 weeks), the FEV(1)/FVC ratio, the percentage change in FEV(1) 10 min after the administration of 200 microg inhaled albuterol, and the differential eosinophil count in blood and induced sputum. We derived normal ranges (from the 95% upper or lower limit for healthy subjects), sensitivity, and specificity (ie, the percentage of subjects with pseudoasthma who had negative test results).</p> <p>RESULTS: Most tests were less specific when the reference population was composed of subjects with conditions that can be confused with asthma. Methacholine airway responsiveness and the sputum differential eosinophil count were the most sensitive (91% and 72%, respectively) and specific (90% and 80%, respectively) tests.</p> <p>CONCLUSION: We conclude that methacholine airway responsiveness and the sputum differential eosinophil count are the most useful objective tests in patients with mild asthma.</p>	<p>Chest. 2002 Apr;121(4):1051-7.</p> <p>A comparison of the validity of different diagnostic tests in adults with asthma.</p> <p>Hunter CJ, Brightling CE, Woltmann G, Wardlaw AJ, Pavord ID.</p> <p>http://www.ncbi.nlm.nih.gov/pubmed/17360170</p>
<p><u>SIGN viide, et SPG+BDT tundlikkus on 24%</u></p> <p>International guidelines recommend a range of clinical tests to confirm the diagnosis of asthma. These focus largely on identifying variable airflow obstruction and responses to bronchodilator or corticosteroid. More recently, exhaled nitric oxide (FE(NO))</p>	<p>Am J Respir Crit Care Med. 2004 Feb 15;169(4):473-8. Epub 2003 Nov 25.</p> <p>Diagnosing asthma: comparisons between exhaled nitric oxide</p>

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measurements and induced sputum analysis to assess airway inflammation have been highlighted. However, to date, no systematic comparisons to confirm the diagnostic utility of each of these methods have been performed. To do so, we investigated 47 consecutive patients with symptoms suggestive of asthma, using a comprehensive fixed-sequence series of diagnostic tests. Sensitivities and specificities were obtained for peak flow measurements, spirometry, and changes in these parameters after a trial of steroid. Comparisons were made against FE(NO) and sputum cell counts. Sensitivities for each of the conventional tests (0-47%) were lower than for FE(NO) (88%) and sputum eosinophils (86%). Overall, the diagnostic accuracy when using FE(NO) and sputum eosinophils was significantly greater. Results for conventional tests were not improved, using a trial of steroid. We conclude that FE(NO) measurements and induced sputum analysis are superior to conventional approaches, with exhaled nitric oxide being most advantageous because the test is quick and easy to perform.	measurements and conventional tests. Smith AD, Cowan JO, Filsell S, McLachlan C, Monti-Sheehan G, Jackson P, Taylor DR.
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Astma hüperdiagnostikast

<p>BACKGROUND: It is unclear whether asthma is overdiagnosed in developed countries, particularly among obese individuals, who may be more likely than nonobese people to experience dyspnea.</p> <p>METHODS: We conducted a longitudinal study involving nonobese (body mass index 20-25) and obese (body mass index ≥ 30) individuals with asthma that had been diagnosed by a physician. Participants were recruited from 8 Canadian cities by means of random-digit dialing. A diagnosis of current asthma was excluded in those who did not have evidence of acute worsening of asthma symptoms, reversible airflow obstruction or bronchial hyperresponsiveness, despite being weaned off asthma medications. We stopped asthma medications in those in whom a diagnosis of asthma was excluded and assessed their clinical outcomes over 6 months.</p> <p>RESULTS:</p> <p>Of 540 individuals with physician-diagnosed asthma who participated in the study, 496 (242 obese and 254 nonobese) could be conclusively assessed for a diagnosis of asthma. Asthma was ultimately excluded in 31.8% (95% confidence interval [CI] 26.3%-37.9%) in the obese group and in 28.7% (95% CI 23.5%-34.6%) in the nonobese group. Overdiagnosis of asthma was no more likely to occur among obese individuals than among nonobese individuals ($p = 0.46$). Of those in whom asthma was excluded, 65.5% did not need to take asthma medication or seek health care services because of asthma symptoms during a 6-month follow-up period.</p> <p>INTERPRETATION:</p> <p>About one-third of obese and nonobese individuals with physician-diagnosed asthma did not have asthma when objectively assessed. This finding suggests that, in developed countries such as Canada, asthma is overdiagnosed.</p>	<p>CMAJ. 2008 Nov 18;179(11):1121-31. doi: 10.1503/cmaj.081332.</p> <p>Overdiagnosis of asthma in obese and nonobese adults.</p> <p>Aaron SD, Vandemheen KL, Boulet LP, McIvor RA, Fitzgerald JM, Hernandez P, Lemiere C, Sharma S, Field SK, Alvarez GG, Dales RE, Doucette S, Fergusson D; Canadian Respiratory Clinical Research Consortium.</p> <p>http://www.ncbi.nlm.nih.gov/pubmed/19015563</p>
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<p><u>Sama valim, mis eelmises uuringus</u></p> <p>It was recently shown that 30% of adults with a physician diagnosis of asthma did not have asthma when objectively assessed using a four-step algorithm involving serial spirometry, bronchial challenge testing and subsequent tapering of asthma medications.</p> <p>The objective of the present study was to determine how many steps in the algorithm were required in order to confirm asthma, and whether any patient-related variables were associated with earlier asthma confirmation. A total of 540 subjects with a previous physician diagnosis of asthma were randomly recruited from the community. The number of subjects confirmed with asthma at each study visit was calculated. Regression analysis was used to determine variables associated with earlier asthma confirmation.</p> <p>Of the 499 subjects who completed the diagnostic algorithm, 346 (69%) had asthma confirmed and 150 (30%) had asthma excluded. Of subjects in whom asthma was confirmed, including those using regular asthma controlling medications, >90% were confirmed with only one or two study visits, by either pre- and post-bronchodilator spirometry or a single bronchial challenge test. Only 46 (9%) out of 499 subjects required tapering of asthma medications and repeated bronchial challenge tests for exclusion or confirmation of asthma. Lower forced expiratory volume in 1 s and younger age were associated with earlier asthma confirmation. For the majority with a previous physician diagnosis of asthma, only pre- and post-bronchodilator spirometry and a single methacholine challenge test are required in order to confirm asthma.</p>	<p>Eur Respir J. 2010 Aug;36(2):255-60. doi: 10.1183/09031936.00165109 . Epub 2010 Jan 14.</p> <p>Confirmation of asthma in an era of overdiagnosis.</p> <p>Luks VP, Vandemheen KL, Aaron SD.</p> <p>http://www.ncbi.nlm.nih.gov/pubmed/20075050</p>
<p>BACKGROUND: The prevalence of obesity and asthma has increased concurrently over the last decades, suggesting a link between obesity and asthma. However, asthma might not be adequately diagnosed in this population.</p> <p>AIM:</p> <p>To investigate whether not only overdiagnosis but also underdiagnosis of asthma is present in an obese population.</p> <p>METHODS:</p> <p>Morbidly obese subjects with or without physician-diagnosed asthma were recruited from a pre-operative screening programme for bariatric surgery, and were characterized using an extensive diagnostic algorithm.</p> <p>RESULTS:</p> <p>473 subjects were screened; 220 met inclusion criteria, and 86 agreed to participate. Among the 32 participating subjects who had a physician diagnosis of asthma, reversible airway obstruction and/or bronchial hyperresponsiveness could only be detected in 19 patients (59%, 95% CI [0.41-0.76]), whereas in 13 patients (41%, 95% CI [0.24-0.50]) the diagnosis of asthma could not be confirmed (overdiagnosis). In contrast, in the remaining 54 patients, 17 (31%, 95% CI [0.20-0.46]) were newly diagnosed with asthma (underdiagnosis).</p> <p>CONCLUSION: Besides overdiagnosis, there is also substantial underdiagnosis of asthma in the morbidly obese. Symptoms could be incorrectly ascribed to either obesity or asthma, and therefore also in the morbidly obese the diagnosis of asthma should also be based on pulmonary function testing.</p> <p>BACKGROUND:</p>	<p>Respir Med. 2013 Jun 10. pii: S0954-6111(13)00181-9. doi: 10.1016/j.rmed.2013.05.007. [Epub ahead of print]</p> <p>Underdiagnosis and overdiagnosis of asthma in the morbidly obese.</p> <p>van Huisstede A, Castro Cabezas M, van de Geijn GJ, Mannaerts G, Njo TL, Taube C, Hiemstra PS, Braunstahl GJ.</p> <p>http://www.ncbi.nlm.nih.gov/pubmed/23764128</p>
	<p>Overtreatment with inhaled corticosteroids and diagnostic</p>

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<p>Underdiagnosis and undertreatment of patients with asthma or chronic obstructive pulmonary disease are widely discussed in the literature. Not much is known about the possible overdiagnosis and consequently the overtreatment with inhaled corticosteroids (ICS). Aim. This study investigates how often ICS are prescribed without a proper indication and how big the diagnostic problem is caused by inappropriate prescription and use of ICS.</p> <p>METHODS:</p> <p>All patients referred to a primary care diagnostic centre during 6 months who used ICS without a clear indication were included. Their GPs were questioned about the reasons for prescribing ICS. If still no diagnosis could be assessed, GPs were advised to stop ICS and renew spirometry after a steroid-free period of at least 3 months. After 1 year, the use of ICS was evaluated and the diagnoses were reassessed.</p> <p>RESULTS:</p> <p>Of all referred patients (2271), 1171 used ICS, 505 (30%) without a clear indication. After 1 year, final results showed that 11% of all patients originally using ICS had no indication to use ICS and had successfully ceased using this medication. For 15%, the reasons for using ICS remained unclear.</p> <p>CONCLUSIONS:</p> <p>Overtreatment with ICS in primary care seems to be considerable, which falsely labels patients as asthmatic and which generates unnecessary costs and possible side effects. The awareness of GPs of the need for proper diagnostic testing before prescribing ICS needs to be improved. Overtreatment with ICS in primary care patients can be diminished by systematically supporting the GP in the diagnostic procedures and decision making.</p>	<p>problems in primary care patients, an exploratory study.</p> <p>Lucas AE, Smeenk FW, Smeele IJ, van Schayck CP.</p> <p>http://www.ncbi.nlm.nih.gov/pubmed/18304973</p>
<p>BACKGROUND:</p> <p>Overdiagnosis of asthma may be an emerging problem after years of attention to the rising prevalence and reported underdiagnosis of the disease.</p> <p>OBJECTIVES:</p> <p>A sample of adult asthmatics from the community was investigated to determine whether they met the current diagnostic criteria for asthma.</p> <p>METHODS:</p> <p>Ninety participants were studied from a self-referred sample of physician-labelled, adult asthmatics from the community. The setting was a tertiary care, university-affiliated teaching hospital in Halifax, Nova Scotia. Three diagnostic criteria from the Canadian Thoracic Society Asthma Guidelines were used to demonstrate the presence of asthma: first, positive symptom history, and either, second, reversible airflow obstruction demonstrable on spirometry or documented peak expiratory flow rate diurnal variability, or, third, bronchial hyperreactivity to methacholine.</p> <p>RESULTS:</p> <p>At the time of the study, 41% of a sample of physician-labelled asthmatics showed no evidence of reversible airflow obstruction and had a negative methacholine challenge. By backward logistical regression analysis, a higher mean number of medications used ($P<0.01$), a lower</p>	<p>Can Respir J. 2004 Mar;11(2):111-6.</p> <p>Overdiagnosis of asthma in the community.</p> <p>LindenSmith J, Morrison D, Deveau C, Hernandez P.</p>

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forced expiratory volume in 1 s ($P < 0.05$) and using inhaled steroids ($P < 0.05$) were predictive of meeting the diagnostic criteria for asthma. Sixty-two per cent of subjects who did not meet the criteria for asthma were currently taking medications for "asthma". Only 52.2% of the subjects reported ever having undergone pulmonary function testing.

CONCLUSIONS:

Overdiagnosis of asthma is a potential problem, which may result in unnecessary or inappropriate medication use, increased health care costs and mislabelling of patients. The authors recommend greater use of objective diagnostic tests such as spirometry, peak flow diaries and bronchial provocation to establish a clinical diagnosis of asthma.