The Association for Clinical Biochemistry & Laboratory Medicine

Better Science, Better Testing, Better Care

Summary of NICE Guidelines

Title	Chronic obstructive pulmonary disease (COPD): Management of chronic obstructive pulmonary disease in adults in primary and secondary care
NICE Reference	CG 101
Date of Review:	June 2013
Date of Publication	June 2010
Summary of Guidance (Max 250 words)	• Theophylline is used to treat patients with COPD by relaxing airway smooth muscle, and it is thought to increase diaphragmatic strength and have effects on muco-cilliary clearance. Because of potential toxicity and significant interactions with other drugs, it is no longer considered initial empirical treatment. • Prescription of theophylline is indicated if a trial of short-acting and long-acting bronchodilators is unsuccessful, or in patients who are unable to use inhaled therapy. In patients who remain symptomatic on monotherapy, combination therapies with beta2 agonists and muscarinic antagonists can be used. • In a COPD exacerbation, intravenous theophylline is indicated if there is an inadequate response to nebulised bronchodilators. Care should be taken when using IV theophylline due to drug interactions and potential toxicity if patient is also on oral theophylline. Caution is also required in older patients due to differences in pharmacokinetics, increased likelihood of co-morbidities and polypharmacy. • Alpha-1 antitrypsin deficiency is an inherited condition that can cause COPD. Alpha-1 antitrypsin normally helps control inflammation in the airway. Deficiency can result in damage to the lungs, leading to COPD. • Exacerbations of COPD may need hospitalisation depending on the severity.
Impact on Lab (See below)	☒ Moderate
Lab professionals to be made aware	☐ Chemical Pathologist ☐ Clinical Scientist
Please detail the impact of this guideline (Max 150 words)	• Theophylline levels should be monitored within 24 hours of starting treatment and subsequently as frequently as indicated by the clinical circumstances.

	• Alpha-1 antitrypsin levels should be measured in patients with early onset COPD, minimal smoking history or family history of alpha-1 antitrypsin deficiency. • If COPD exacerbation requires hospital admission, U&Es should be measured on the patient. • Laboratory measurement of arterial blood gases may be required. Treatment in hospital is recommended if oxygen saturation of arterial blood (SaO_2) < 90%, arterial pH <7.35 and / or arterial partial pressure of oxygen in arterial blood (PaO_2) <7 kPa in addition to other clinical factors including breathlessness, cyanosis, changes on chest x-ray.

Impact on Lab

- **None**: This NICE guideline has no impact on the provision of laboratory services
- **Moderate**: This NICE guideline has information that is of relevance to our pathology service and may require review of our current service provision.
- **Important:** This NICE guideline is of direct relevance to our pathology service and will have a direct impact on one or more of the services that we currently offer.

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