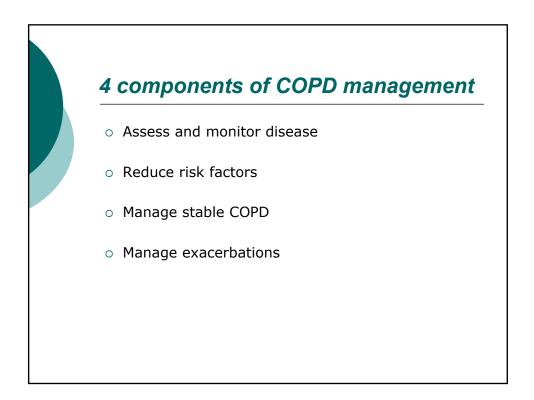


Airflow	Limitation	Reversib	ility
	ATS	ERS	GOLD
† in FEV1	> 200ml		> 200ml
†in FEV1 %	> 12	> 10	> 12
L			1

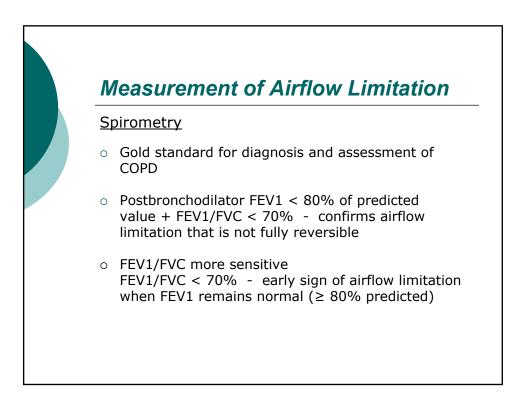
Consider COPD if

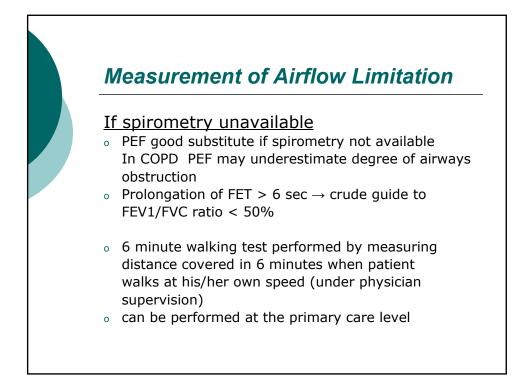
Chronic	Present intermittently or every day
cough	Often present throughout the day
	seldom only nocturnal
Sputum	Any pattern of chronic sputum
	production
Dyspnoea	Progressive (worsens over time)
	Persistent (present every day)
	Worse on exercise
	Worse during respiratory infections
H/o	Tobacco smoke
Exposure	occupational dusts and chemicals, smoke
	from home cooking and heating fuels

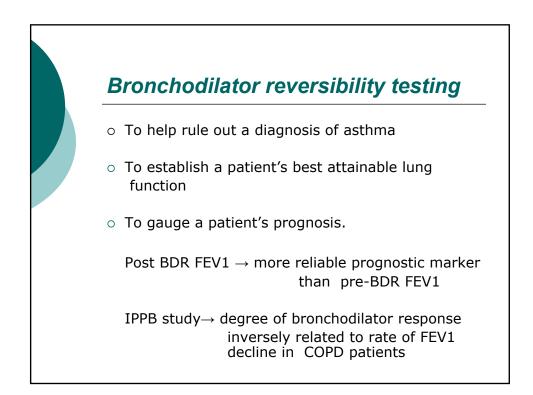


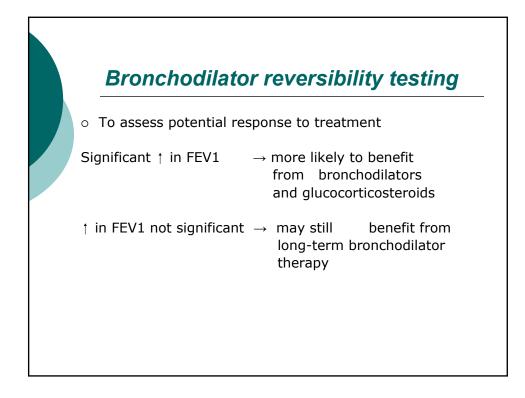


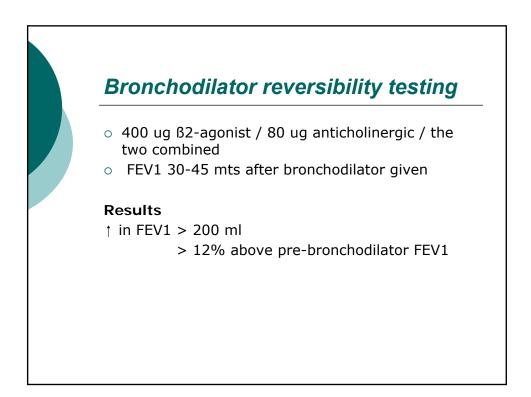
- Symptoms + spirometry
- Management of COPD largely symptom driven
- Only an imperfect relationship between the degree of airflow limitation and symptoms

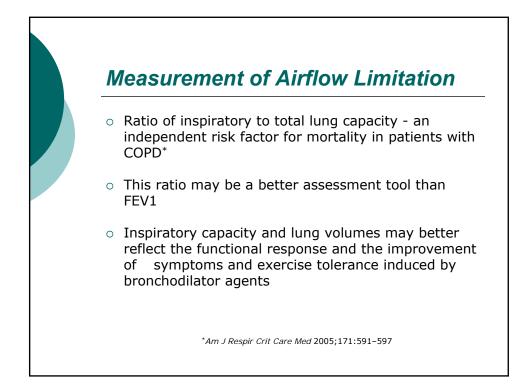


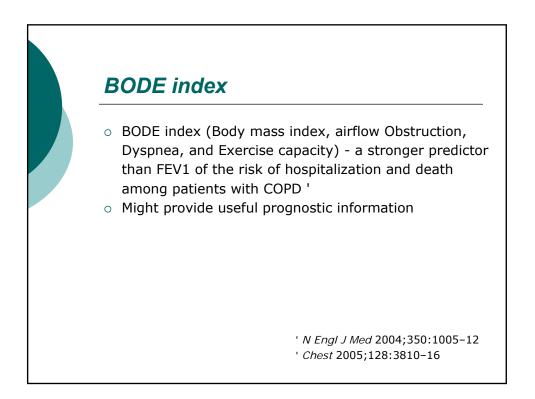


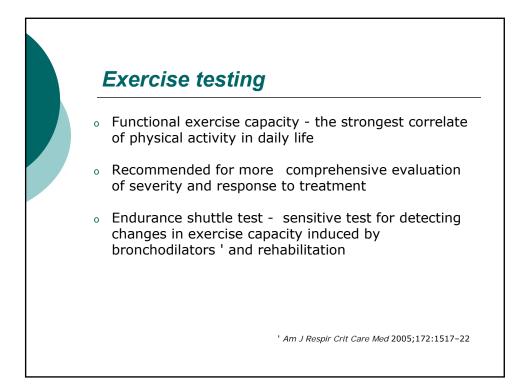


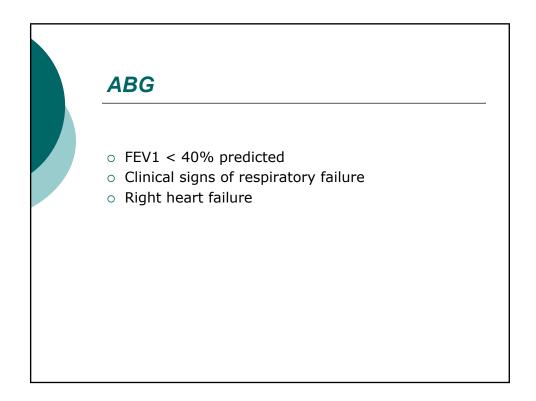












Radiology

CXR

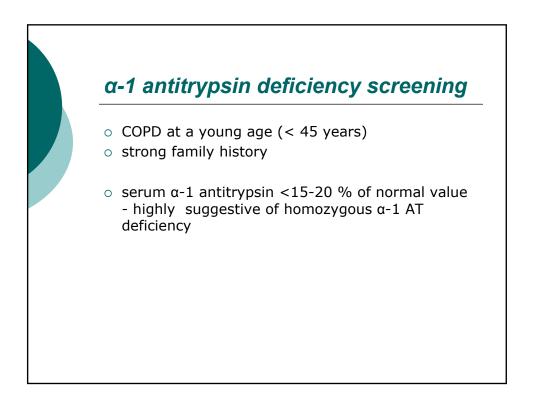
Signs of hyperinflation

- $\circ~$ flattened diaphragm on lateral CXR ~
- ↑ in volume of retrosternal air space
- Hyperlucency of lungs

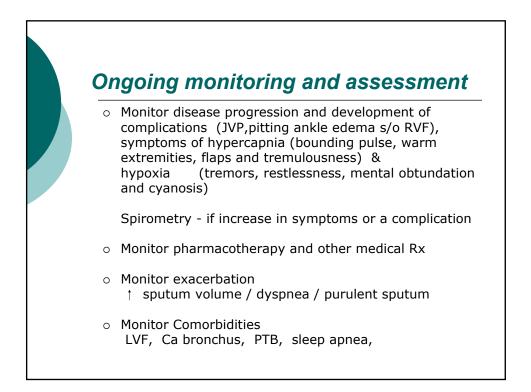
Rapid tapering of vascular markings

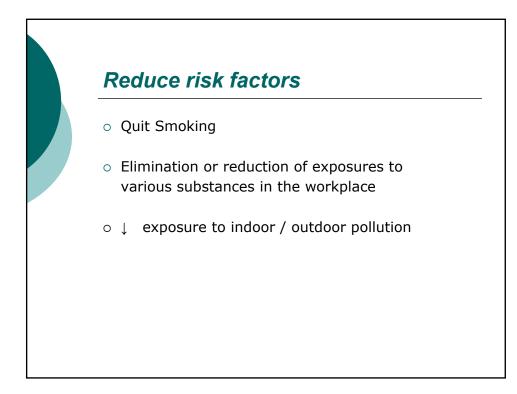
HRCT chest

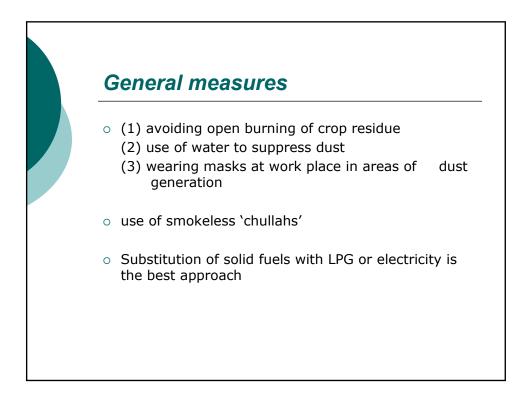
- o If diagnosis doubtful
- If a surgical procedure such as bullectomy or lung volume reduction contemplated



Stage	Characteristics
0: At Risk	. normal spirometry . chronic symptoms (cough, sputum production)
I: Mild COPD	 FEV1/FVC < 70% FEV1 ≥80% predicted ± chronic symptoms (cough, sputum production)
II: Moderate COPD	. FEV1/FVC < 70% . 50% \leq FEV1 < 80% predicted . \pm chronic symptoms (cough, sputum production)
III: Severe COPD	. FEV1/FVC < 70% . 30% ≤FEV1 < 50% predicted . ± chronic symptoms (cough, sputum production)
IV: Very Severe	 FEV1/FVC < 70% FEV1 < 30% predicted or FEV1 < 50% predicted + chronic respiratory failure

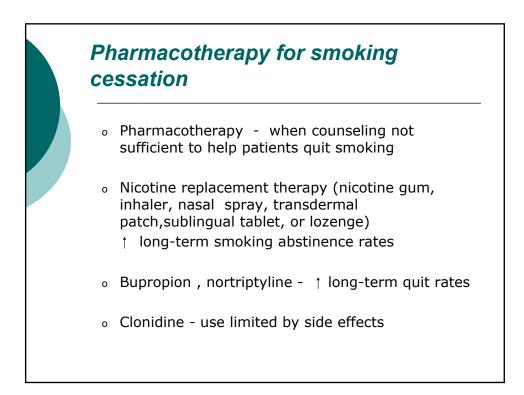






Strategies to Quit Smoking

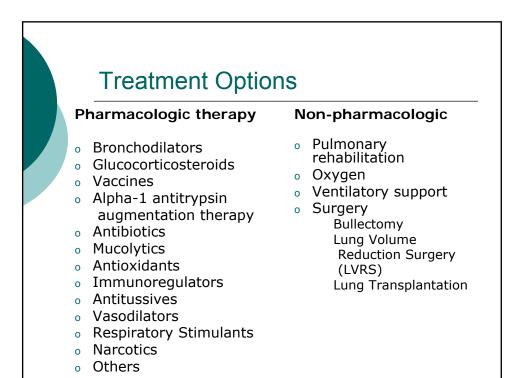
1. ASK	: EVERY patient at EVERY clinic visit
2. ADVISE	: To quit
3. ASSESS	: Determine willingness to quit
4. ASSIST	: Aid the patient in quitting – provide practical counseling ,pharmacotherapy and social support
5. ARRANGE	: Schedule follow-up contact



Pharmacotherapy for smoking cessation

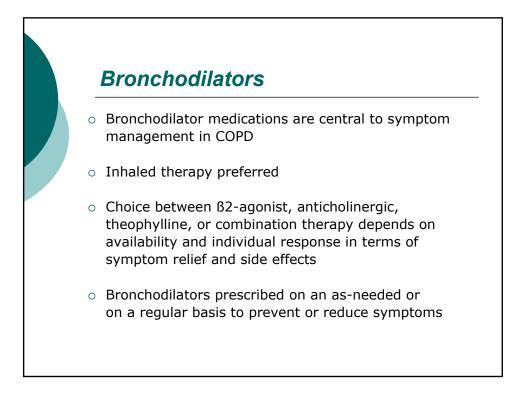
Quit rates

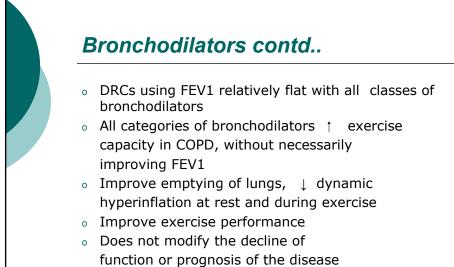
- Placebo 6%
- $\circ~$ NRT and behavioural therapy 9%
- Bupropion (6-9 wks) 18% at 1 yr



General principles

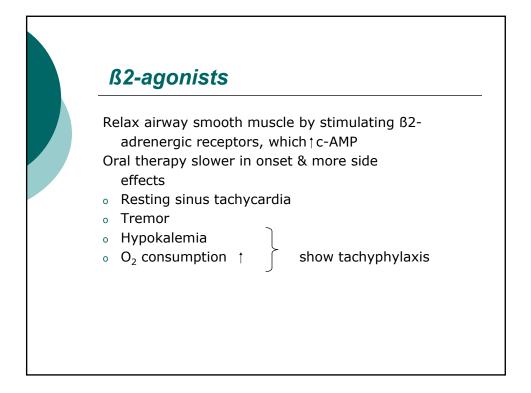
- None of the existing medications shown to modify long-term decline in lung function
- Smoking cessation and continuous long-term oxygen treatment only pharmacologic interventions that modify natural history of COPD
- Stepwise increase in treatment
- Treatment response variable





Bronchodilators contd..

- Long-acting inhaled bronchodilators are more effective and convenient, but more expensive
- Combining bronchodilators may improve efficacy and decrease the risk of side effects compared to increasing the dose of a single bronchodilator



Therapy at Each Stage of COPD					
New (2003)	0: At Risk	I: Mild	II: Moderate	III: Severe	IV: Very Severe
	A'	voidance of i	risk factor(s);	influenza v	accination
		Add sh	ort-acting bro	onchodilator	when needed
				bronchodila	vith one or more tors
				Add inhaled glucocortico repeated ex	
					Add long-term oxygen if chronic respiratory failure <i>Consider</i> surgical treatments

ß2-	agonist	S	
Drug Sho) rt-acting	Inhaler(ug)	Duration of Action (hrs)
Fen	oterol	100-200 (MDI)	4-6
Salb	utamol	100, 200 (MDI & DPI)	4-6
Terb	outaline	400, 500 (DPI)	4-6
Long	g-acting		
Forr	noterol	4.5–12 (MDI & DPI)	12+
Saln	neterol	25-50 (MDI & DPI)	12+

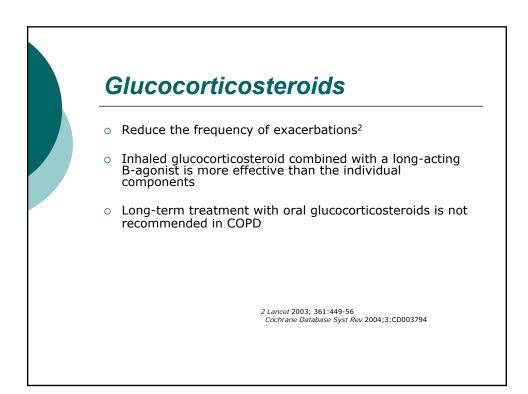
Anticholinergics	;	
Drug	Inhaler (ug)	Duration of Action (hrs
Anticholinergics		
Short-acting		
Ipratropium bromide	20, 40 (MDI)	6-8
Oxitropium bromide Long-acting	100 (MDI)	7-9
Tiotropium	18 (DPI)	+24
Combination		
Fenoterol/Ipratropium	200/80 (MDI)	6-8
Salbutamol/Ipratropium	. ,	6-8



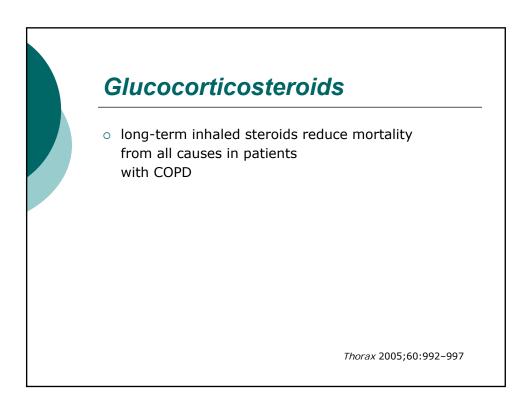
 Regular inhaled glucocorticosteroids does not modify long-term decline of FEV1

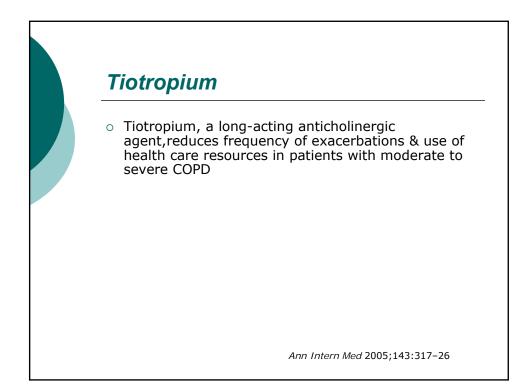
Appropriate for

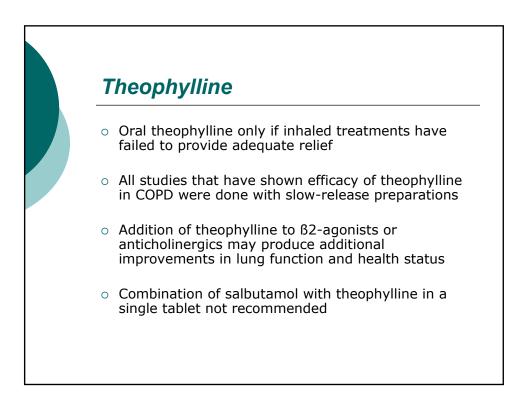
- Symptomatic COPD patients with an FEV1 < 50% predicted (*Stage III: Severe COPD* and *Stage IV: Very Severe COPD*) and
- Repeated exacerbations

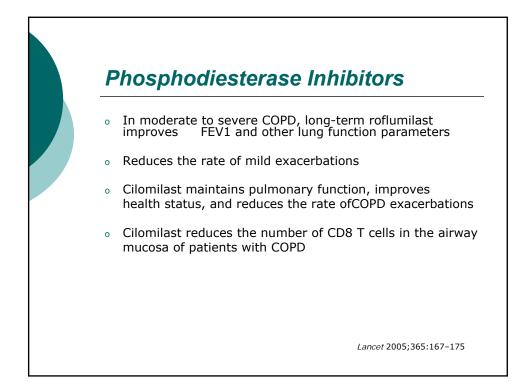


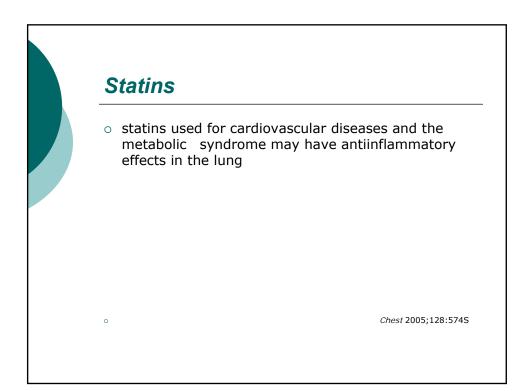
Drug	Inhaler	Solution for	Oral
Beclomethasone	50-400 (MDI & DPI)	0.2-0.4	
Budesonide	100, 200, 400	(DPI)	0.20, 0.25, 0.5
Fluticasone	50-500 (MDI & DPI)		
Triamcinolone	100 (MDI)	40	
Combination			
Formoterol/Budesonide	4.5/80, 160 (DPI)		
	(9/320) (DPI)		
Salmeterol/Fluticasone	50/100, 250, 500 (DPI)		
	25/50, 125, 250 (MDI)		
Systemic glucocorticosteroids			
Prednisone			5-60 mg (Pill)
Methyl-prednisolone	10-2000 mg		4, 8, 16 mg (Pill)

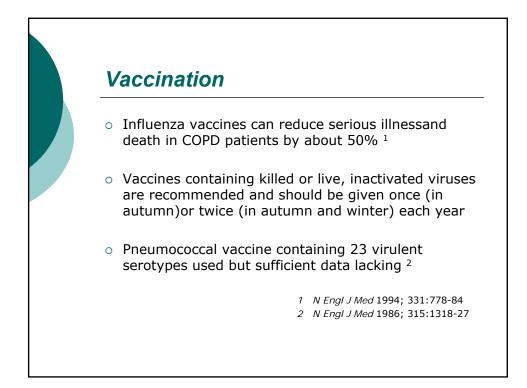


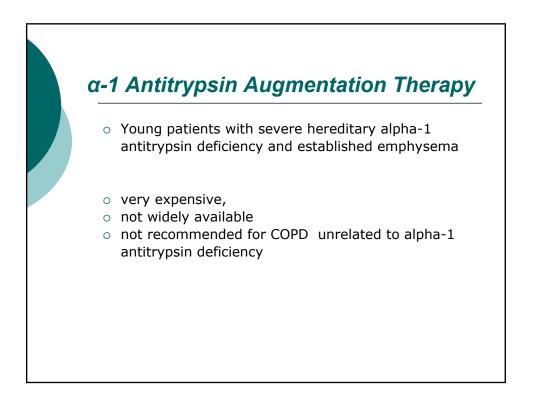


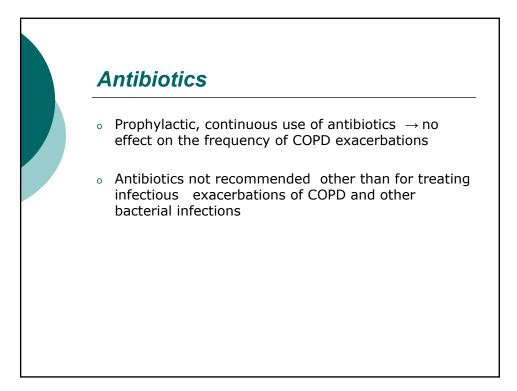


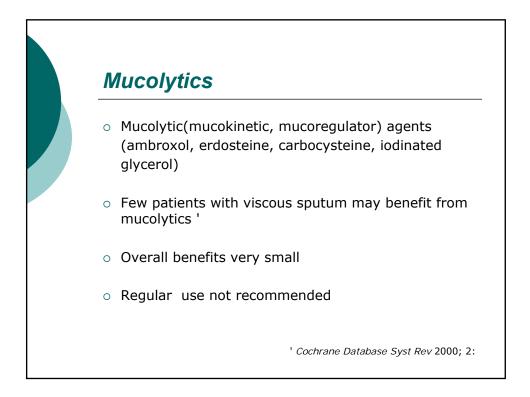






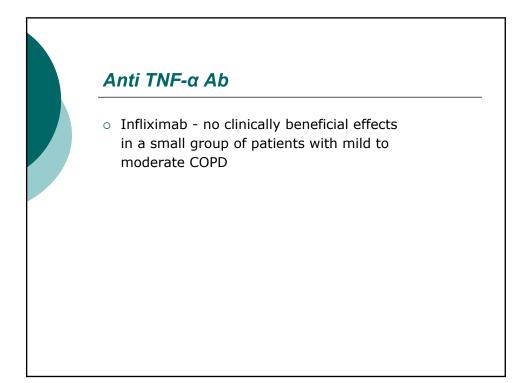






Antioxidant agents

- N-acetylcysteine shown to reduce frequency of exacerbations and could have a role in treatment of recurrent exacerbations
- Routine use not yet recommended

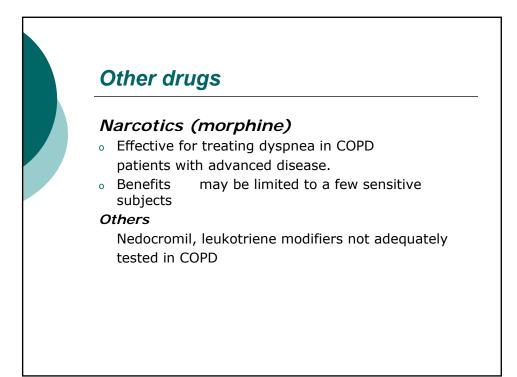


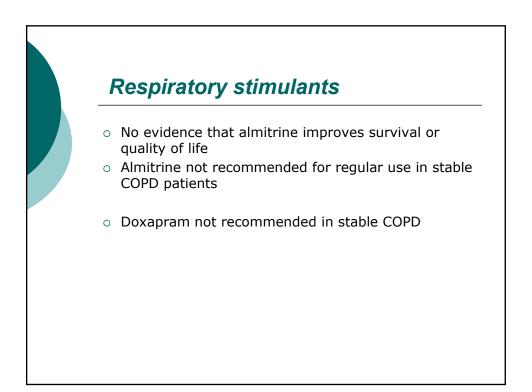
Antitussives

- Cough, although sometimes a troublesome symptom in COPD, has a significant protective role
- Regular use of antitussives contraindicated in stable COPD

Vasodilators

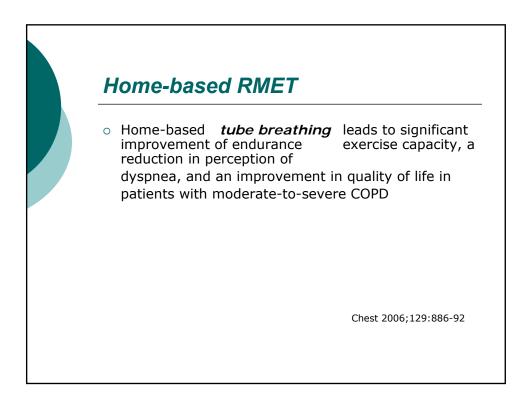
- Inhaled nitric oxide can worsen gas exchange because of altered hypoxic regulation of ventilation-perfusion balance
- Nitric oxide contraindicated in stable COPD







- Exercise trainingsimple corridor exercise training
- o Nutrition counseling
- Education



Oxygen therapy

- Long-term oxygen (>15 hours /day) to patients with chronic respiratory failure increase survival
- Also have a beneficial impact on exercise capacity , hemodynamics, hematologic characteristics, lungmechanics and mental state
- Long-term home oxygen therapy improved survival in a selected group of COPD patients with severe hypoxaemia (arterial PaO2 less than 55 mm Hg (8.0 kPa)'
- Did not improve survival in patients with mild to moderate hypoxaemia or in those with only arterial desaturation at night

• 'Cochrane Database Syst Rev 2005;4:CD001744

