Analysis of the data from the CURE trial reveals that the number needed to treat (NNT) with clopidogrel to prevent the first primary outcome is 47. The number needed to harm (NNH) with clopidogrel to cause one major haemorrhage is 99. This means that, for every 100 patients with non-ST elevation acute coronary syndrome treated for 3–12 months, clopidogrel will prevent two cardiovascular deaths, MI's or strokes while causing one major haemorrhage.

Subgroup analysis of the CURE trial demonstrates that patients who at high clinical risk (as judged by the TIMI risk score) gain particular benefit from clopidogrel therapy, although lower risk patients with non-ST elevation acute coronary syndromes may still stand to benefit. In low-risk patients, 16 patients would need to be treated (NNT) for 3–12 months to prevent one primary outcome, while treating 143 patients for the same period (NNH) would lead to one major haemorrhage. For intermediate-risk patients, NNT is 63 while NNH is 83. For high-risk patients, NNT is 21 while NNH is 100.

As such, if 1,000 patients in each category were treated, 16 low-risk patients would be saved from a primary outcome, while 7 would have a major haemorrhage. For intermediate-risk patients, 16 would be saved while 12 would have a major haemorrhage. For high-risk patients, 48 would be saved while 10 would have a major haemorrhage.

While the benefit of clopidogrel is maintained in all risk groups, the effect was most profound in the high-risk group. A careful risk-benefit consideration should be made before prescribing the drug for prolonged periods in low-risk patients.

► CLINICAL BOTTOM LINE

Clopidogrel should be given to patients with non-ST elevation acute coronary syndromes in the Emergency Department.

CURE investigators CURE Trial. *New England Journal of Medicine* 2001;**345**:494–502.

Budaj A, Yusuf S, Mehta SR, et al. Clopidogrel in Unstable angina to prevent Recurrent Events (CURE) Trial Investigators Benefit of clopidogrel in patients with acute coronary syndromes without ST-segment elevation in various risk groups. *Circulation* 2002;**106**(13):1622–6.

Administration of steroids in acute exacerbations of COPD

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Search checked by Craig Ferguson - *Clinical Research Fellow*

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A short cut review was carried out to establish whether post discharge steroids are beneficial in acute exacerbations of COPD. 237 papers were found using the reported search, of which one presented the best evidence to answer the clinical question. The author, date and country of publication, patient group studied, study type, relevant outcomes, results and study weaknesses of this best paper are tabulated. It is concluded that post-discharge steroids are beneficial in the short term.

Table 4

Author, country, date	Patient group	Study type	Outcomes	Key results	Study weaknesses
Wood-Baker RR <i>et al</i> , 2005, Tasmania	All randomised controlled trials comparing oral or parenteral corticosteroids with a placebo in the treatment of acute exacerbations of COPD	Systematic review	Treatment Failure ie Relapse/Return to ED, Re-admission rates	7 studies; 805 patients; Steroids reduced the risk treatment failure: odds ratio 0.48; 95% CI 0.34 to 0.68. NNT 9.	The studies were not designed to look at mortality and therefore the follow up was not for a long period of time. The primary outcome was relapse rates and re-admission rates and mortality was secondary outcome measure
			Death	9 studies; 910 patients; no statistically significant difference, Odds Ratio 0.85; 95% CI 0.45 to 1.59.	
			FEV1 up to 72 hours	7 studies; 652 patients; weighted mean difference 140; 95% CI 80 to 200 ml	
			Arterial blood gas measurements (ABG)	2 studies 155 patients; improvements in pO2 at 72 hrs; Standardised Mean Difference 0.35 [0.03, 0.67]	
	A total of 921 participants were included in the nine studies contributing to the meta-analysis		Dyspnoea scores	2 studies showed diff at 72 hrs; 1 no diff. no data from remaining studies	
			Adverse drug effects (ADE)	7 studies; 650 patients; odds ratio 2.29; 95% confidence interval 1.55 to 3.38. Overall one extra adverse effect occurred for every 6 people treated (95% CI 4 to 10). The risk of hyperglycaemia was significantly increased, odds ratio 5.48; 95% confidence interval 1.58 to 18.96.	
			Adverse effect-hyperglycaemia Late FEV1 (litres)	3 studies; 313 patients; odds Ratio 5.48 [1.58, 18.96] 5 studies; 537 patients; Weighted Mean Difference 0.03 [–0.04, 0.10]	

Clinical scenario

A 55 year old man, known to have COPD, attends the Emergency Department complaining of being more short of breath than usual and having a productive cough. You treat him with continuous nebulised bronchodilator therapy, oral steroids and antibiotics. He starts to improve and, on reassessing him clinically after reviewing his chest x-ray and blood tests you decide to discharge him with community follow up. You wonder whether he should continue on a short course of steroids in addition to his antibiotics.

Three part question

In [patients with an acute exacerbation of COPD] are [steroids prior to discharge better than no steroids] at [improving outcome and hastening recovery]?

Search strategy

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Ovid MEDLINE 1966-November 2005

[{COPD.mp. or exp Pulmonary Disease, Chronic Obstructive or COAD.mp. or chronic bronchitis.mp. or exp Bronchitis, Chronic OR emphysema.mp. or exp EMPHYSEMA/ or exp PULMONARY EMPHYSEMA} AND [{acute.mp. or exp ACUTE DISEASE or exacerbation.mp}] AND [{exp STEROIDS/ or steroids.mp or steroid\$.mp or hydrocortisone.mp. or exp HYDROCORTISONE or hydrocort\$.mp. or exp Prednisone/ or exp Prednisolone/ or predniso\$.mp or glucocorticoid\$.mp or exp GLUCOCORTICIDS}] LIMIT to Human and English language

Embase 1980–2005 Week 47

[{COPD.mp. or COAD.mp. or exp Chronic Obstructive Lung Disease/ or chronic bronchitis.mp. or exp Chronic

Bronchitis/ or exp Lung Emphysema/ or exp Emphysema} AND {exp Acute Disease/ or acute.mp. or exacerbation.mp.} AND { exp Hydrocortisone/ or hydrocort\$.mp. or exp Prednisolone/ or predniso\$.mp.} Limit to Human, English language and Clinical Queries “treatment high sensitivity”

Outcome

237 papers found of which one was a recently updated well done systematic review found

Comments

Treatment of patients with acute exacerbations of COPD with corticosteroids is a common practice. The evidence shows that this significantly improves lung function and breathlessness up to the first 72 hours. It also reduces the treatment failure within the first 30 days. However, these effects appear to be short lived and there is no effect on mortality. Also there is an increased incidence of adverse effects related to steroids. However, the studies were not designed to look at long term mortality outcomes and this seems reasonable as the intervention was a short course of steroids and hence the effects were observed for a maximum period of 30 days.

► CLINICAL BOTTOM LINE

The use of steroids has clear benefit in the acute management of the patient but with added risk of adverse drug effects and with no clear long term benefit in improvement in lung function or increased life expectancy

Wood-Baker RR, Gibson PG, Hannay M, *et al.* JAE Walters Systemic corticosteroids for acute exacerbations of chronic obstructive pulmonary disease. *The Cochrane Database of Systematic Reviews* 2005, Issue 1. Art. No.: CD001288. DOI: 10.1002/14651858.CD001288.pub2.