



Guideline topic: Pharmacological management of asthma
Evidence table 4.4a: Inhaled corticosteroid vs theophylline

Author	Year	Study type	Quality rating	Population	Outcomes measured	Effect size	Confidence intervals / p values	Comments
Young People and Adults								
Galant ¹	1996	Randomised, double-blind placebo, parallel group 12 week treatment period	++	N=353 Age 12 –75 19 centres Fluticasone 50ug bd, 100ug bd vs theophylline	1] change in FEV1 2] change in FVC 3] am PEF 4] salbutamol use 5] symptoms 6] night awakenings	FP 50 ug bd vs theophylline 0.66L vs 0.37L 0.63L vs 0.30L 54 vs 21 L/min -1.7vs -0.9/day -0.6 vs -0.3 -0.2 vs -0.1	p<0.004 p<0.003 p<0.001 NS p<0.001 NS	FP 50 ug bd was more effective than theophylline in improving lung function and asthma control. There was no difference between FP 50ug bd and FP 100ug bd.
Matthys ²	1994	Randomised, double-blind cross-over 6 week treatment+	+	N=8 Adults Single centre Budesonide	1] PEF 2] FEV1 3] Carbachol challenge	Budesonide vs theophylline 460 vs 439 L/min 3.27 vs	NS NS NS NS	Very small sample size. No statistical difference between budesonide

				400ug bd vs theophylline 800 mg od	4] BAL 5] beta-agonist use	3.32L 0.92 vs 0.74 kPa/l No difference in cell counts 1.16 vs 1.97	NS	and theophylline. Study probably underpowered to demonstrate differences.
Reed ³	1998	Randomised, double-blind, double-dummy, parallel group 12 month treatment period	++	N=747 Children + adults age 6-65 yrs Beclomethasone 84ug qid ms theophylline bd	1] Symptom score 2] Severe symptoms 3] PEF 4] Beta-agonist use 5] Steroid use 6] Doctor visits 7] Days off	BDP vs theophylline Less with BDP 20 vs 31% No difference in PEF Less use with BDP 20% vs 29% 19.2% vs 19.8% 24% vs 23%	P=0.002 P=0.002 NS P<0.05 p<0.05 NS NS	Although there was no difference in PEF, overall, BDP was more effective than theophylline in asthma control.

1. Galant SP, Lawrence M, Meltzer EO, Tomasko M, Baker KA, Kellerman DJ. Fluticasone propionate compared with theophylline for mild-to-moderate asthma. *Ann Allergy Asthma Immunol* 1996;77(2):112-8.
2. Matthys H, Muller S, Herceg R. Theophylline vs. budesonide in the treatment of mild-to-moderate bronchial asthma. *Respiration* 1994;61(5):241-8.
3. Reed CE, Offord KP, Nelson HS, Li JT, Tinkelman DG. Aerosol beclomethasone dipropionate spray compared with theophylline as primary treatment for chronic mild-to-moderate asthma. The American Academy of Allergy, Asthma and Immunology Beclomethasone Dipropionate-Theophylline Study Group. *J Allergy Clin Immunol* 1998;101(1 Pt 1):14-23.