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Asthma: treat it while it's still reversible - GlaxoSmithKline Breakfast Session

Saturday, 22 June 2013 Start 7:00am Duration: 60mins Sportsdrome

Top Tips in Modern Asthma Management

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Rotorua GPCME Meeting

June 2013

Speaker declaration

Dr Christopher Worsnop, Respiratory and Sleep Physician, Austin Hospital, Melbourne.

No conflicts of interest

Key messages of the *Optimal control in asthma* meeting

- Poor asthma control reduces quality of life and increases the economic burden on the healthcare system
- Patients and clinicians tend to underestimate severity and overestimate control of asthma
- Majority of patients can achieve Global Initiative for Asthma (GINA)-defined control with the right treatment
- The Asthma Control Test (ACT) is an effective questionnaire for continual assessment of GINA-defined control
- GINA guidelines recommend combination ICS/LABA therapy over high-dose ICS
- PHARMAC access restrictions for fixed-dose combination therapy have relaxed

Holgate et al 2006; Holt & Beasley 2001; Thomas et al 2009; Bateman et al 2004; Thomas et al 2009; Bateman et al Guidelines 2012 Pharmaceutical Management Agency 2011

Pathophysiology of asthma

- Asthma is a chronic condition causing airway inflammation and hyperresponsiveness
- Inflammation and hyperresponsiveness are present in all clinical forms of asthma
- Although exacerbations are episodic, airway inflammation is always present
- Upon exposure to risk factors, hyperresponsive airways become obstructed via:
  - increased inflammation
  - mucus plugs
  - bronchoconstriction

Bateman et al. *Guidelines* 2011; Bateman et al. *Pocket guide* 2011

Asthma attitudes

- People with asthma tend to expect and accept symptoms and limitations as an inevitable, normal part of having asthma
- Patients consistently rate their asthma as well-controlled, despite symptom levels above guideline expectations
- Patients less likely to report symptoms to GPs if they perceive symptoms as normal
- Studies have shown many patients whose asthma is poorly controlled are also under-treated
- Responsibility of GPs to show patients that effective treatments are available

Holt et al. 2001

Burden of poor asthma control

- Poor asthma control is associated with:
  - increased urgent healthcare utilisation
  - increased economic burden on the healthcare system
  - reduced patient quality of life
- Asthma is the most common cause of children's hospital admissions in New Zealand
- In 2001, the economic cost of asthma in New Zealand was conservatively estimated at $825 million
- Asthma represented the third highest disease burden in New Zealand, causing 17,059 years lost to disability (YLD)

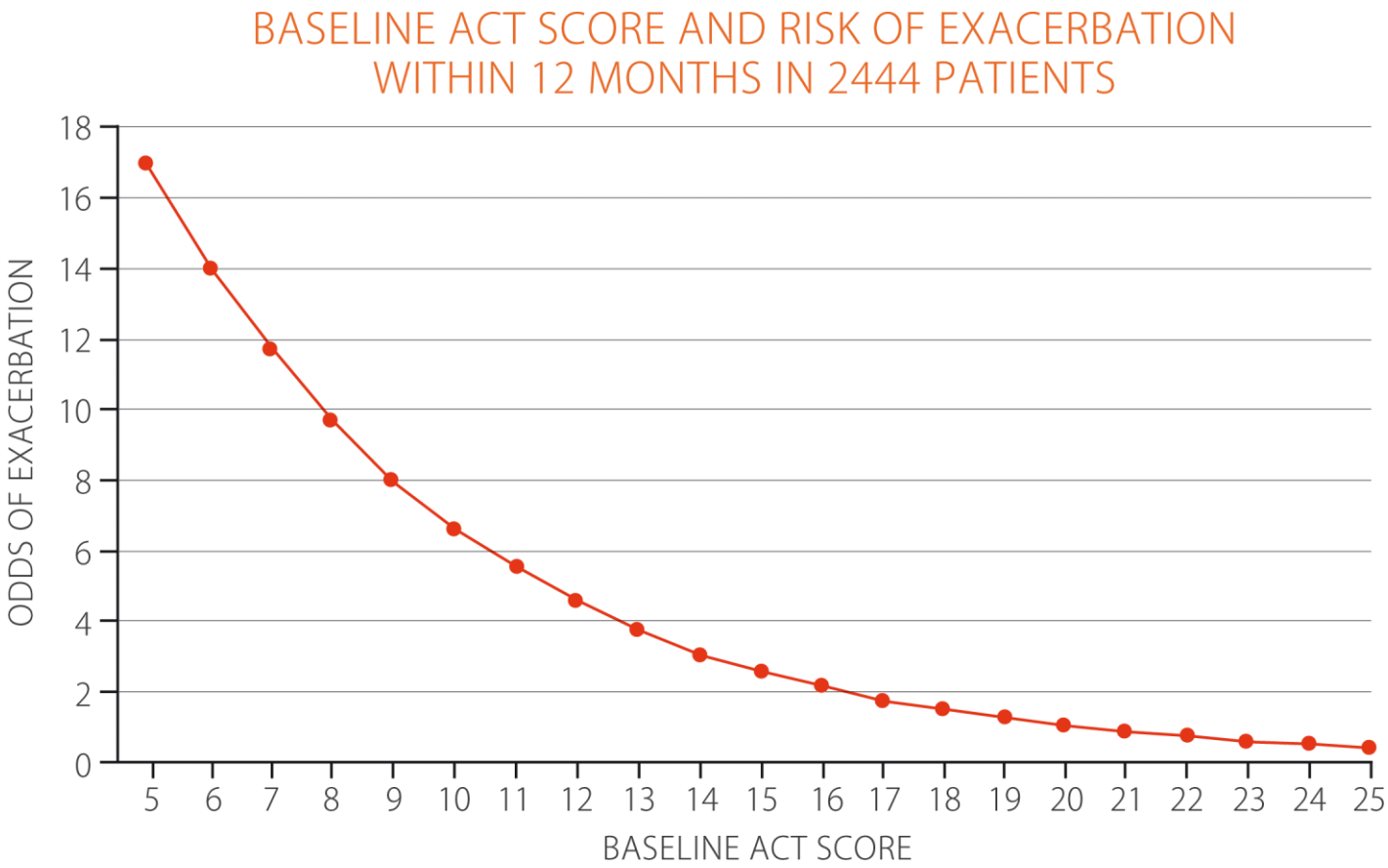
Lai et al. 2011, Masoli et al, 2004, Holt et al. 2001, Holgate et al. 2006

Asthma Control Test (ACT)

- GINA guidelines emphasise benefit of using asthma control, rather than asthma severity, as guide for management decisions
- The ACT is a patient-completed, validated questionnaire
- Uses 5 questions to assess asthma control over the past 4 weeks, giving overall 'score' of control
  - Score 19 or below – asthma sub-optimally controlled
  - Score 15 or below – asthma uncontrolled

Thomas et al. 2009

Baseline ACT reflects risk of exacerbation



Schatz et al. 2009

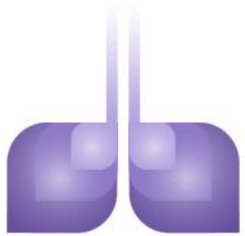
Top Tip 1

The ACT (Asthma Control Test) is a set of repeatable, standardised, validated questions that reflect the risk of exacerbation

Taking control

- Multiple international surveys have shown patients tolerate high levels of symptoms and overestimate control
- Patients often uneducated about level of control achievable
- Patients under-report symptoms and severity to GPs
- Clinicians have been shown to underestimate asthma's impact on patient quality of life
- Prevalence of under-treatment in asthma very high in people with uncontrolled asthma

Holt et al. 2001; Horne et al. 2007; Thomas et al. 2009



Top Tip 2

Both patients and clinicians underestimate the impact of asthma

GINA-defined control

CHARACTERISTIC	CONTROLLED (ALL OF THE FOLLOWING)	PARTLY CONTROLLED (ANY MEASURE PRESENT)	UNCONTROLLED
Daytime symptoms	None (twice/less per week)	More than twice per week	3 or more features of partly controlled asthma
Limitation of activities	None	Any	
Nocturnal symptoms/ awakenings	None	Any	
Need for reliever/ rescue treatment	None (twice/less per week)	More than twice per week	
Lung function (PEF or FEV1)	Normal	<80% predicted or personal best (if known)	

Bateman E, Boulet L, Cruz A et al. 2012

Steps to assess and monitor asthma

- Assess each patient for their current treatment regimen, adherence, and level of control
- Treat patient to achieve control
- Once controlled for 3 months, consider stepping down therapy
- Monitor to maintain control and ensure the lowest effective dose and treatment step is used
  - Minimise side-effects and cost
- Monitor regularly, not just when patient presents regarding their asthma

Bateman et al. *Guidelines* 2012

Personalised asthma action plans

- Personalised action plans
  - help patients alter their therapy in response to changes in their level of control
  - consistently improve patient outcomes, reducing days missed from work, hospitalisations, emergency healthcare use and nocturnal wakening
- Implementation of 20 asthma action plans will prevent 1 hospitalisation

Bateman et al. *Guidelines* 2012

GINA treatment steps

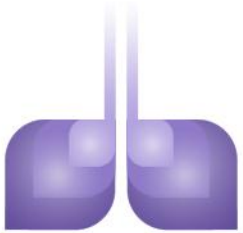
STEP 1	STEP 2	STEP 3	STEP 4	STEP 5
Asthma education. Environmental control. (If step-up treatment is being considered for poor control, first check inhaler technique, check adherence, and confirm symptoms are dues to asthma)				
As needed, rapid-acting beta$_2$ agonist	As needed, rapid-acting beta$_2$ agonist			
Controller options	Select one	Select two	To step 3 treatment, add 1 or more	To step 3 treatment, add either
	Low-dose inhaled corticosteroid (ICS)	Low-dose ICS plus long-acting beta$_2$ agonist (LABA)	Medium or high-dose ICS plus (LABA)	Oral glucocorticosteroid (lowest dose)
	Leukotriene modifier	Medium or high-dose ICS Low-dose ICS plus leukotriene modifier	Leukotriene modifier Sustained-release theophylline	Anti-IgE treatment
		Low-dose ICS plus sustained-release theophylline		

GINA suggests the newly diagnosed asthma patients should be started at step 2, or step 3 if very symptomatic

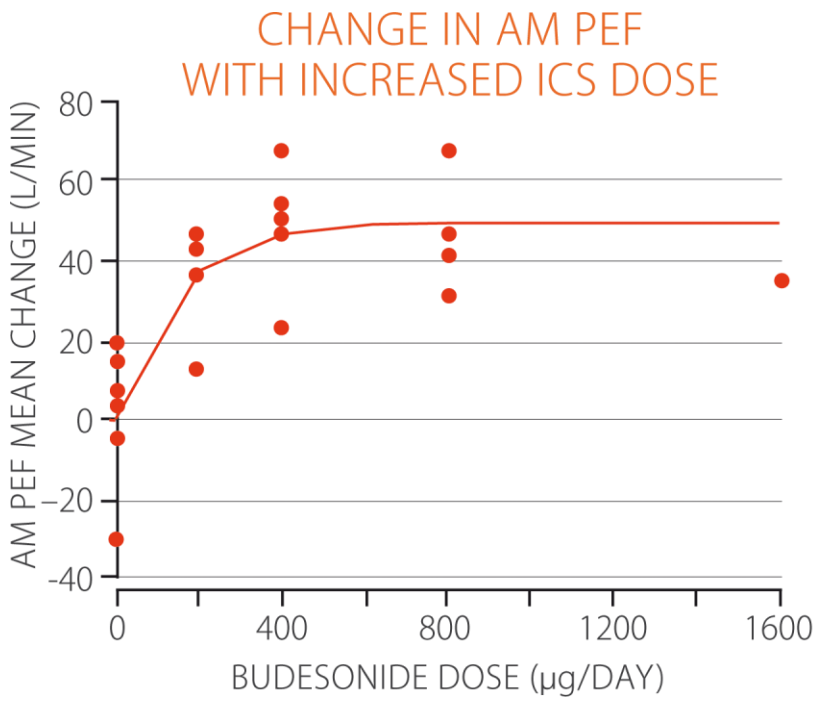
Bateman et al. *Guidelines, Dec* 2012

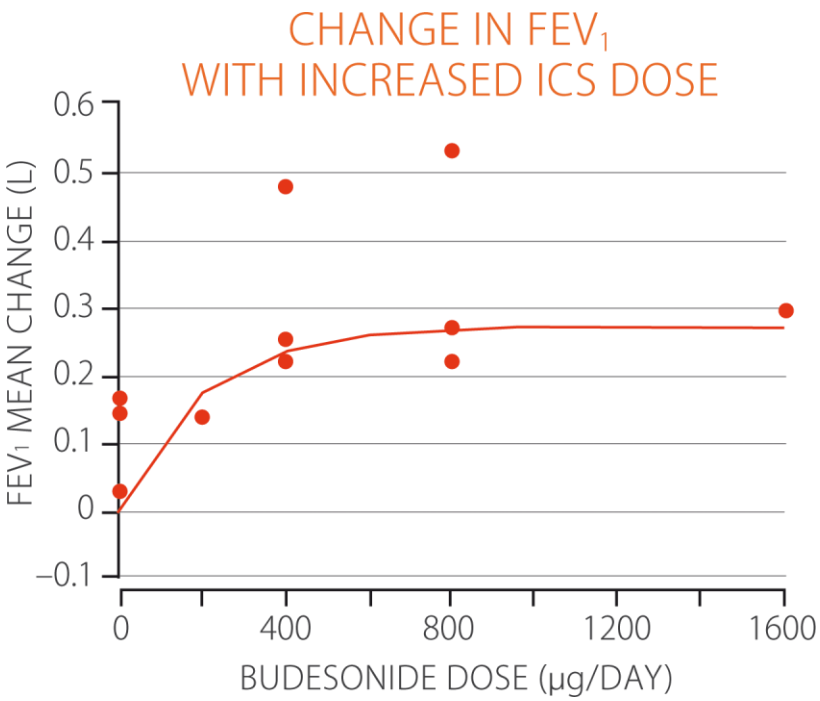
Top Tip 3

GINA defined control is the goal



Inhaled corticosteroids (ICS) – 1

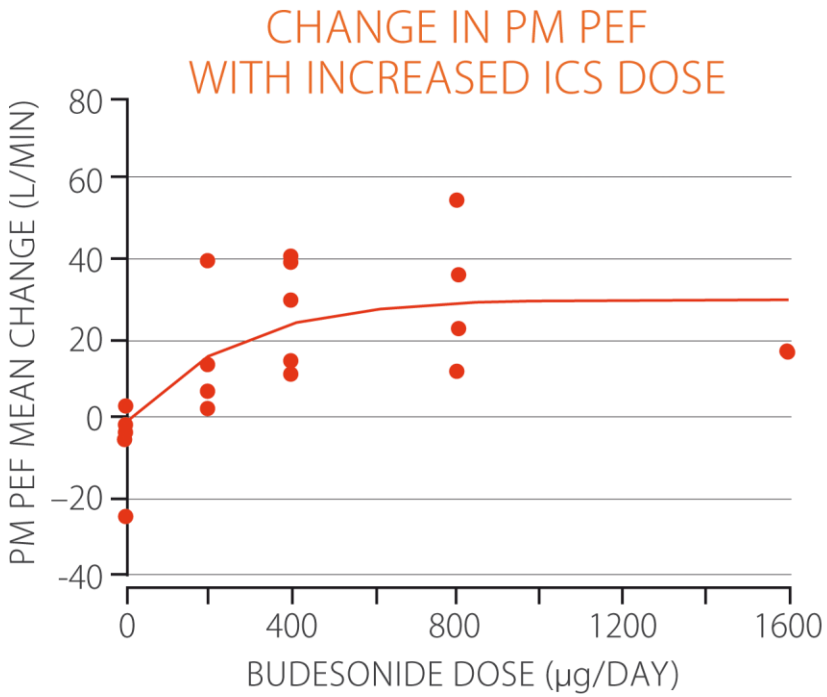


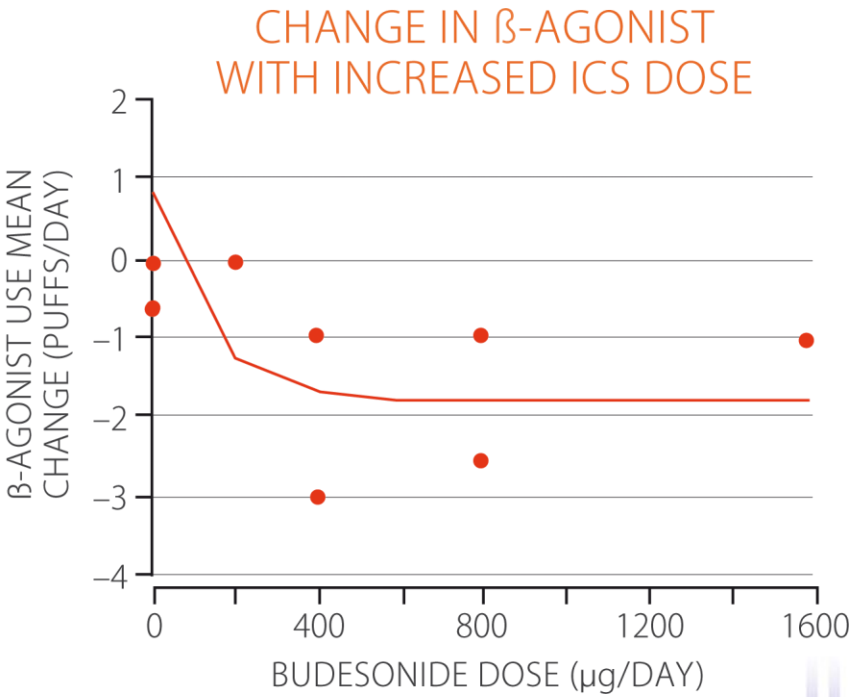


Adapted from Masoli et al. 2004; Masoli et al. *Thorax* 2003

Inhaled corticosteroids (ICS) – 2

- ICS have a dose-response plateau from around 400 µg budesonide per day or equivalent (200 µg fluticasone per day)





Adapted from Masoli et al. 2004; Masoli et al. *Thorax* 2003

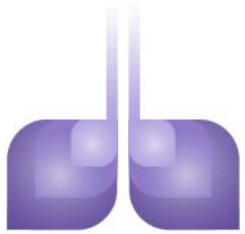
ICS and mortality risk

- Use of regular low-dose ICS associated with 50% reduction in risk of death from asthma
- ICS doses required to produce mortality reduction are lower than those associated with systemic or ocular adverse events
- ICS therapy not curative, and discontinuation results in reversion to pre-initiation risk levels
- Compliance to ICS therapy is vital to achieve optimal outcome from treatment
- Intermittent use unlikely to provide equivalent results

Suissa et al. 2000; Bateman et al. *Guidelines* 2012

Optimal use of ICS

- Continual increases of ICS dose will not necessarily improve symptoms
- More likely to increase incidence of side-effects
  - Dysphonia, oropharyngeal candidiasis, bruising, adrenal suppression, BMD loss, skin thinning
- Aim to achieve asthma control with minimum ICS dose: treat to response then step down to lowest effective dose
- Is there evidence that high-dose ICS may be effective in the acute setting of an exacerbation?



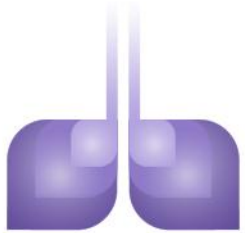
Masoli et al. *Thorax* 2003; Bochner et al. 2010; Bateman et al. *Guidelines* 2012; Masoli et al. *Arch Dis Child* 2003

Top Tip 4

Increasing the dose of ICS will not necessarily improve symptoms

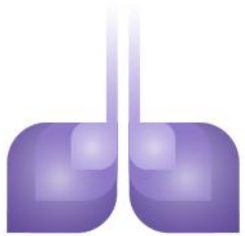
Guidelines for asthma treatment

- NZ asthma guidelines last updated in 2002
- GINA guidelines are updated at least annually
  - Most recently updated in December 2012
- NZ guidelines contain useful information specific to NZ
- For the most recent evidence-based clinical guidelines, refer to GINA guidelines rather than NZ



Long-acting beta$_2$ agonists (LABAs)

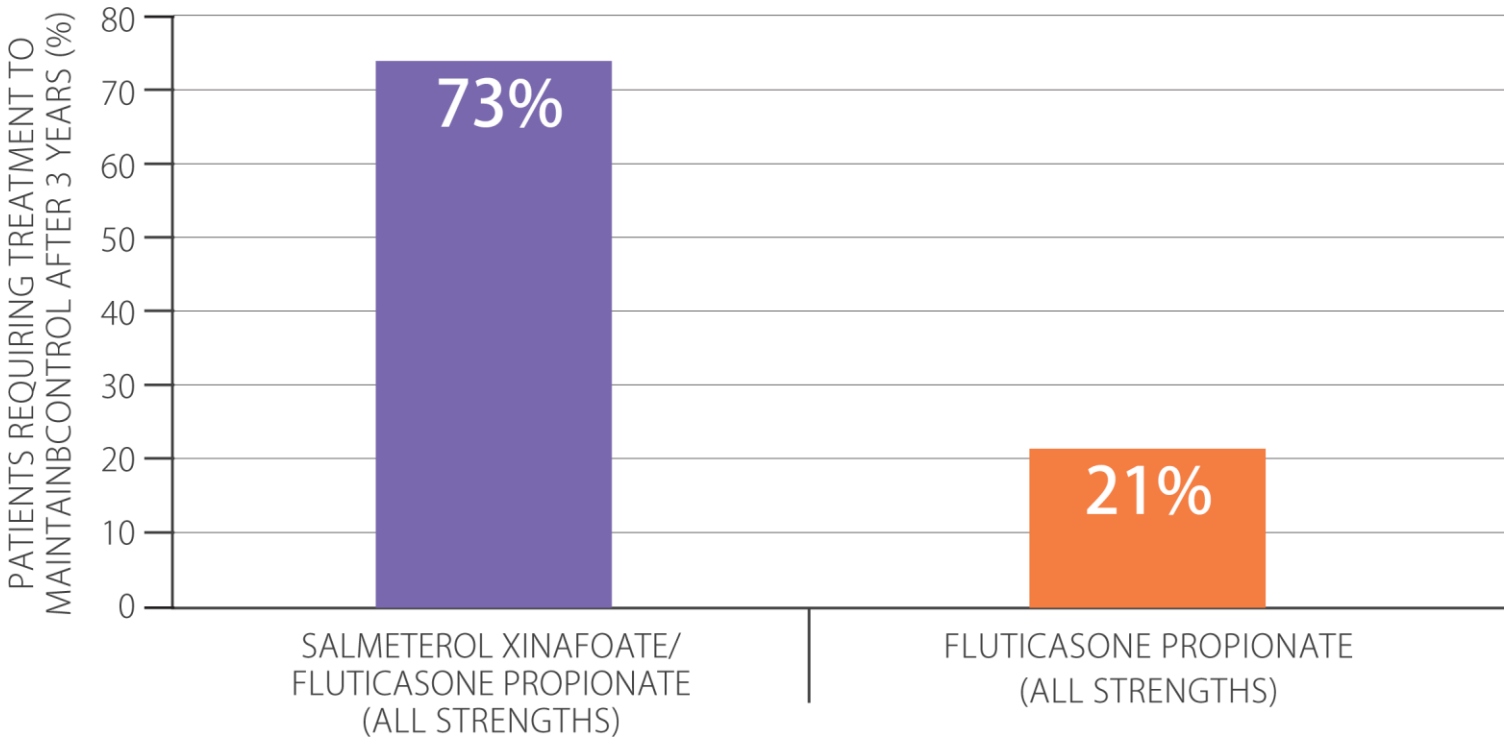
- Relax bronchial smooth muscle through the stimulation of beta$_2$ adrenoceptors
- Indicated for maintenance treatment of asthma in patients already receiving inhaled or oral corticosteroids
- Not to be used as monotherapy – fixed-dose combination products ensure concurrent use with ICS and remove risk of monotherapy
- GINA guidelines recommend the addition of LABA therapy to low-dose ICS in preference to increasing ICS monotherapy



Bochner et al. 2010; Bateman et al. *Guidelines* 2012

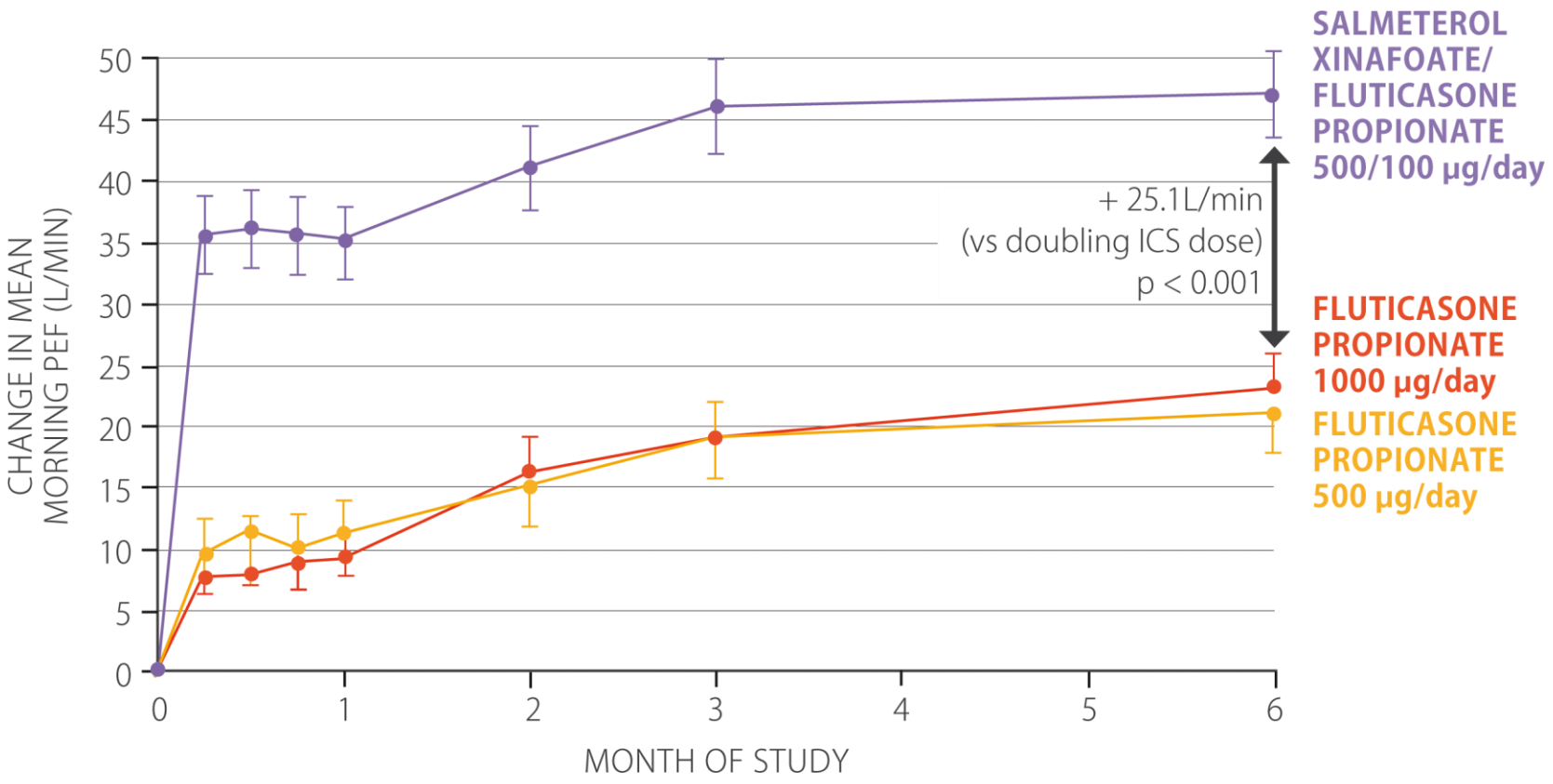
LABA and ICS – 1

- People with asthma are more likely to achieve clinical control with combination therapy than with ICS monotherapy



Adapted from Lundback et al. 2009; Thomas et al. 2008; Ind et al. 2003

LABA and ICS – 2



Thomas et al 2008; Ind et al 2003; Lundback et al 2009

Top Tip 5

GINA guidelines recommend the addition of LABA therapy to low-dose ICS in preference to increasing ICS monotherapy

Metered dose inhaler (MDI) device

- The MDI device uses an inert propellant gas to deliver medication
- Advantage of familiarity – an older device, same as used for most relievers
- Requires hand–breath coordination for effective use
- Can be used with a spacer, eliminating issue of coordination

Bochner et al. 2010

Subsidy changes for ICS + LABA combination

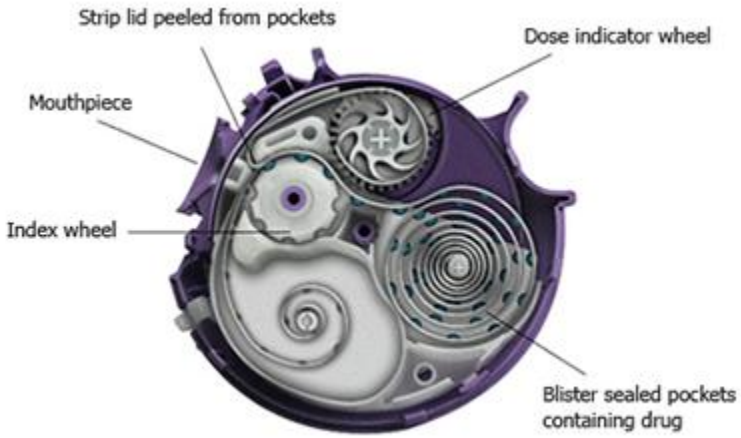
- 10 years ago, prescribing trends in asthma tended toward high-dose ICS
- The legacy of this and access restrictions is still evident in prescribing behaviour
- However, combination treatment can now be started earlier and with full government funding:
  *Removal of the requirement for patients to be on separate ICS and LABA inhalers for at least three months prior to being eligible for funded combination inhalers [has been approved]**
  – PHARMAC, 2011

*Requirements: Patient has been treated with inhaled corticosteroids of at least 800 µg per day beclomethasone or budesonide, or 500 µg per day fluticasone; and the prescriber considers that the patient would receive additional clinical benefit from switching to a combination product.

Turner et al. 2008; Pharmaceutical Management Agency 2011

Accuhaler dry powder inhaler (DPI) device

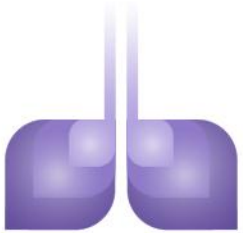
- Delivers medication in a dry powder form
- Breath-activated, therefore requires less hand–breath coordination
- Requires a minimum inspiratory flow rate to be effective
- Dose counter on device



Bochner et al 2010

Top Tip 6

Pick an inhaler device that the patient can use effectively



Summary – 1

- Patients with asthma and their physicians consistently underestimate severity and overestimate control
- Asthma control, rather than asthma severity, should be used to guide treatment decisions
- The ACT is an easily implemented, patient-completed questionnaire, useful in providing a simple overview of a patient's control

Holt et al. 2001; Thomas et al. 2009; Thomas et al. 2008; Ind et al. 2003; Lundback et al. 2009; Bochner et al. 2010; Pharmaceutical Management Agency 2011

Summary – 2

- People with asthma are more likely to achieve clinical control with combination therapy than either monotherapy
- The Accuhaler DPI device improves deposition of medicine to the lungs and reduces need for dexterity and hand–breath coordination
- The 3-month requirement for separate ICS and LABA therapy prior to being eligible for funded combination inhalers has been removed

Holt et al. 2001; Thomas et al. 2009; Thomas et al. 2008; Ind et al. 2003; Lundback et al. 2009; Bochner et al. 2010; Pharmaceutical Management Agency 2011

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