Therapeutics Lecture Series

ASTHMA
Therapeutics

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OUTLINE

- 1) Management of chronic out-patient asthma
  - Inhaler technique
- 2) Treatment of life-threatening or severe asthma

MANAGEMENT OF OUTPATIENT ASTHMA

Principles of Management

- Educate patients on deteriorating control
- Aim to gain control of symptoms rapidly
- Use *short courses* of oral steroids as required
- Monitor compliance & inhaler technique
- Once well controlled, reduce doses progressively until symptoms reappear, then choose appropriate dose

5 STEPS OF ASTHMA MANAGEMENT

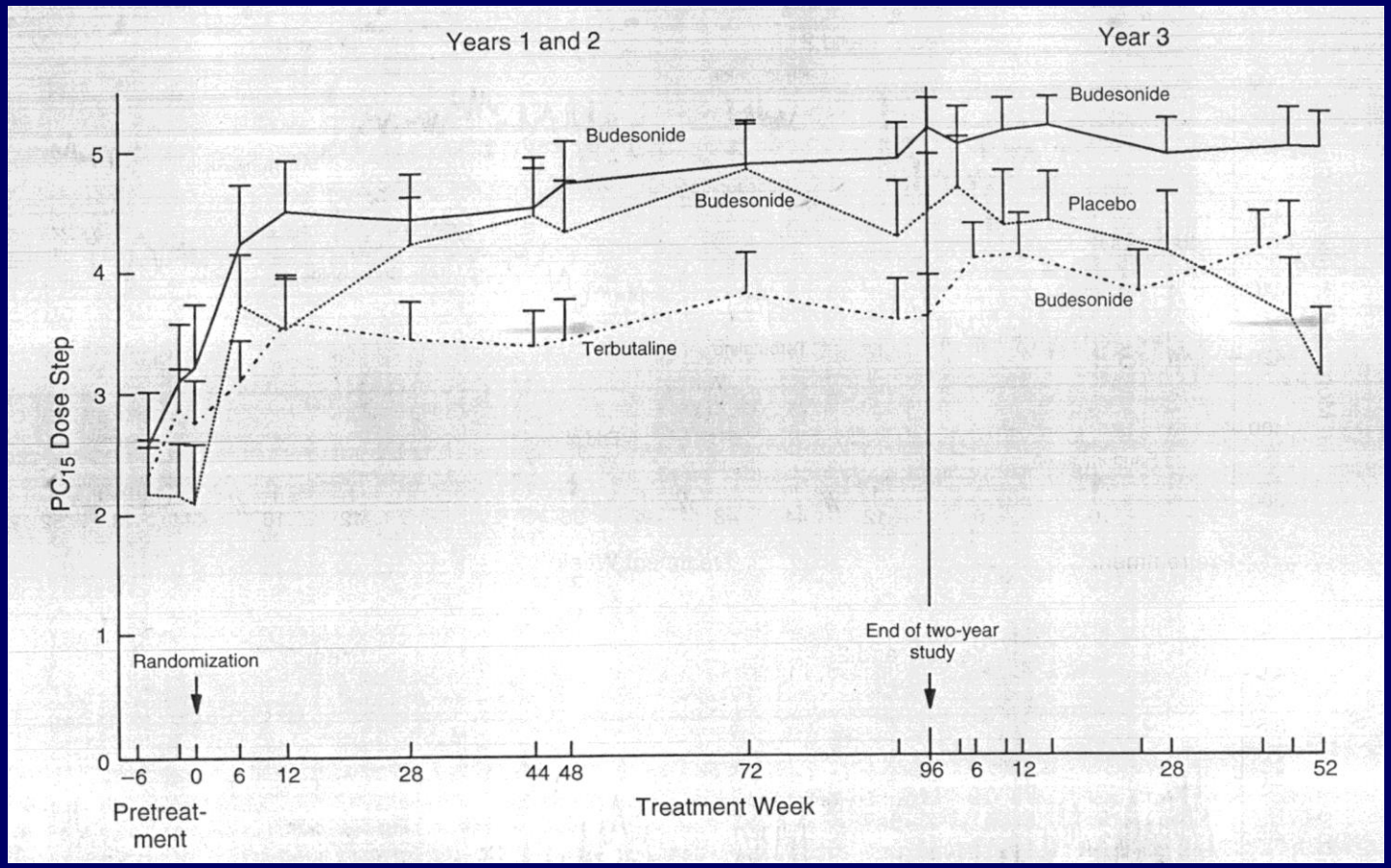
SA $ß_2$ agonist

Step 1 + Low dose ICS

Step 1

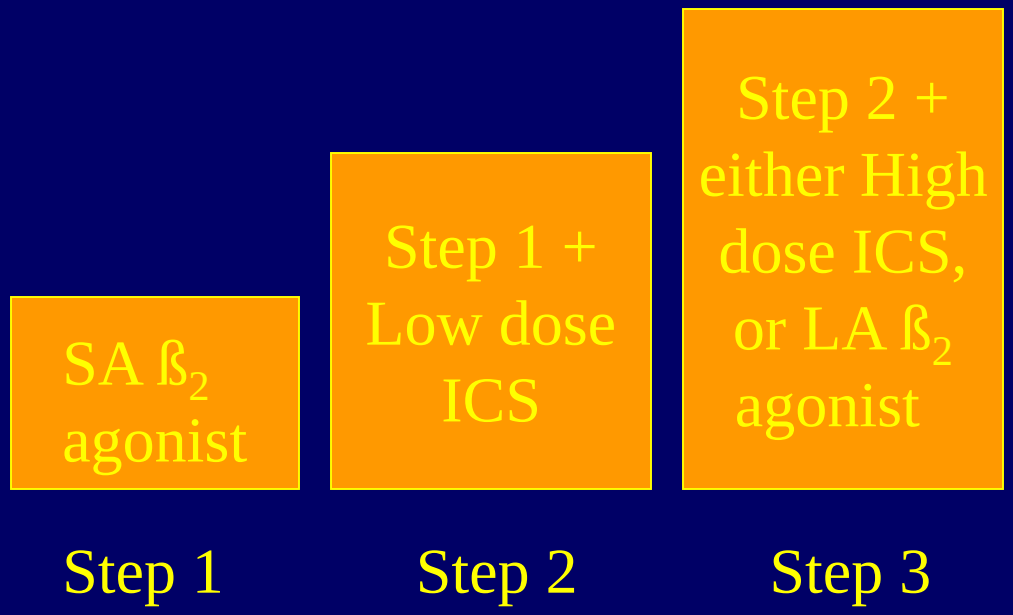
Step 2

VALUE OF ICS AT STEP 2

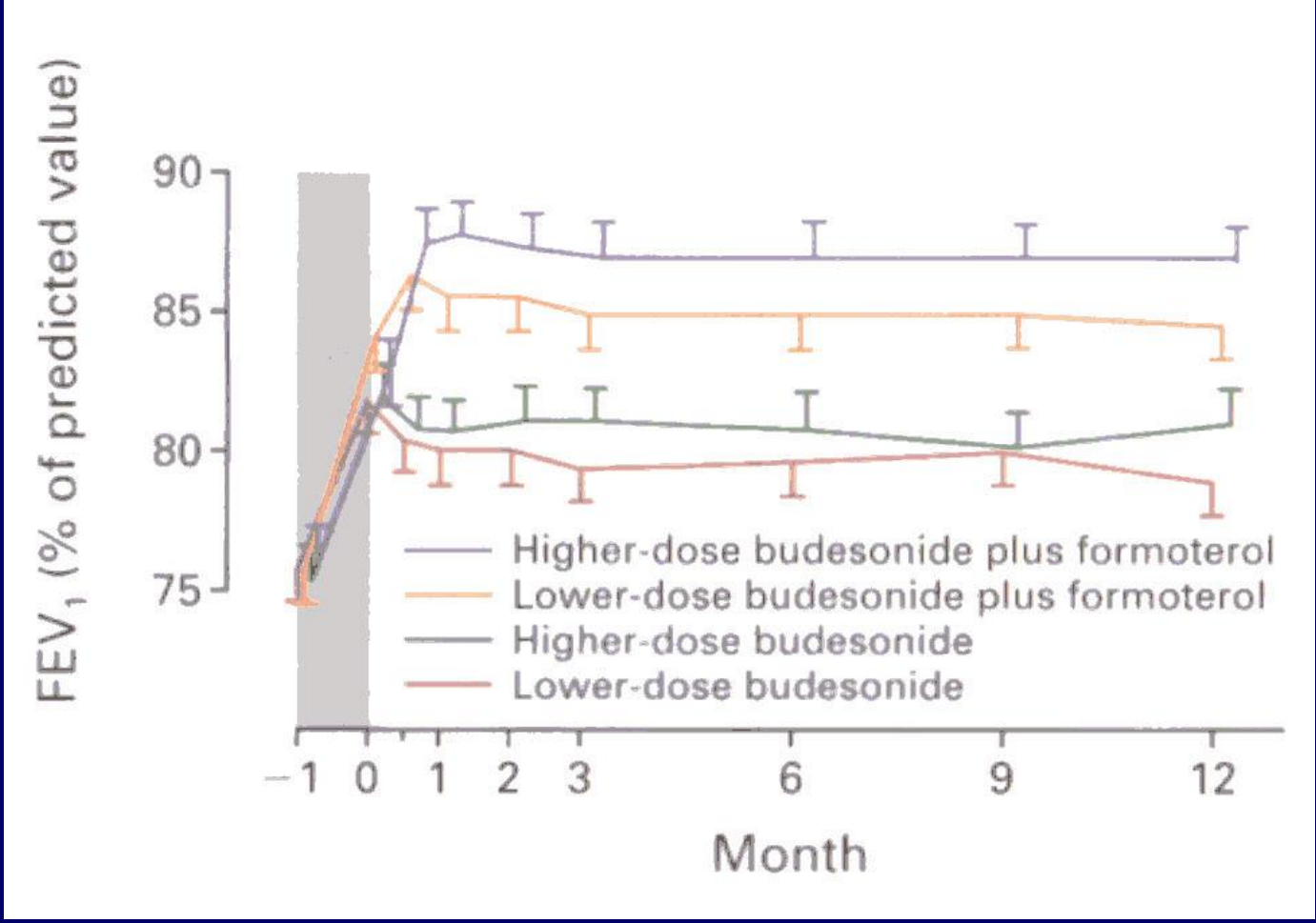


Haahtela et al NEJM 1994; 331:700-5

5 STEPS OF ASTHMA MANAGEMENT

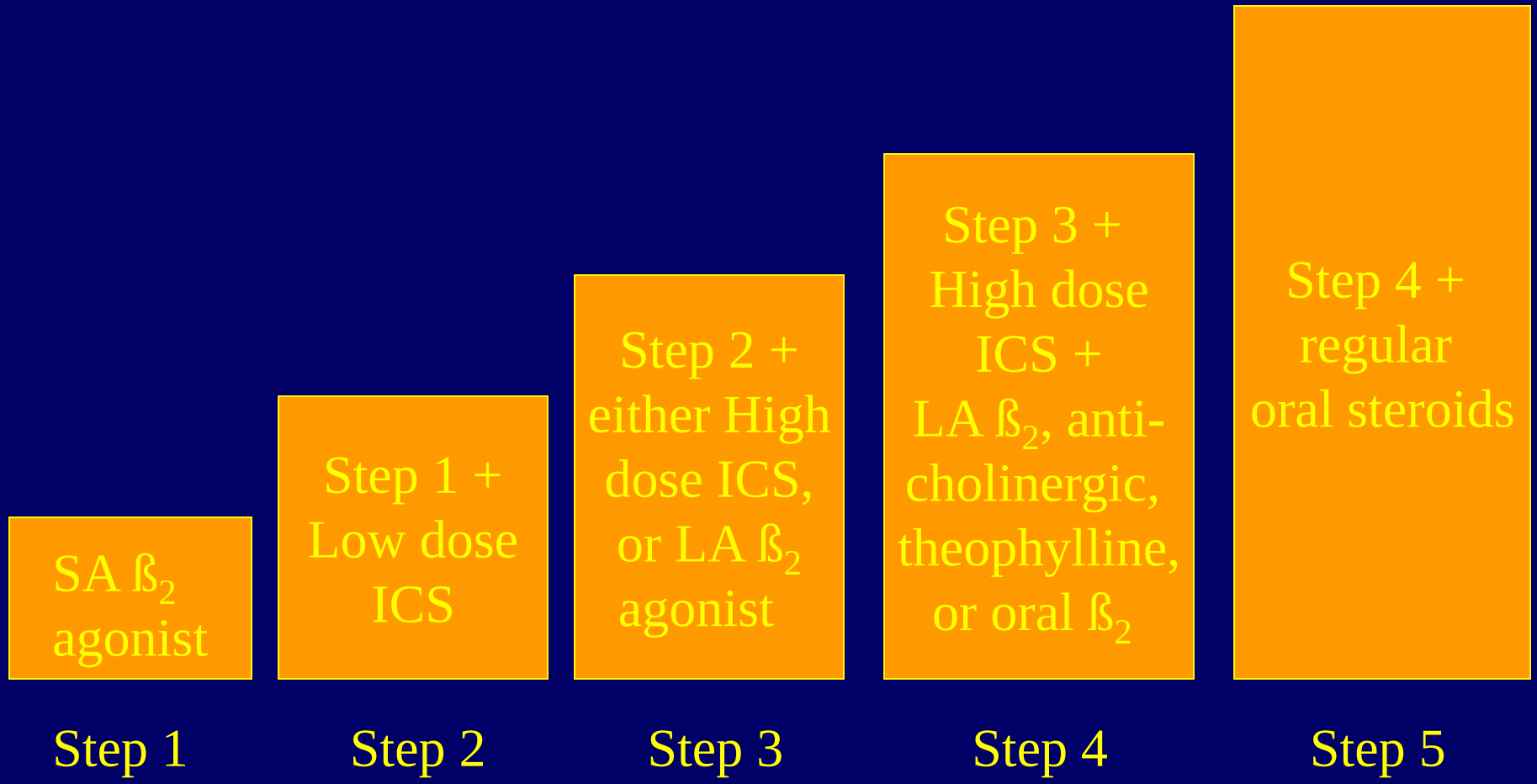


USE OF LAß$_2$ AGONISTS AT STEP 3



Pauwels et al NEJM (1997); 337:1405-11

5 STEPS OF ASTHMA MANAGEMENT



INHALER TECHNIQUE

- Shake canister
- Exhale to FRC i.e. end of tidal breathing, not RV
- Simultaneously activate inhaler and inhale to TLC
- Hold breathe for 10 seconds
- Maximally 15% reaches bronchial tree

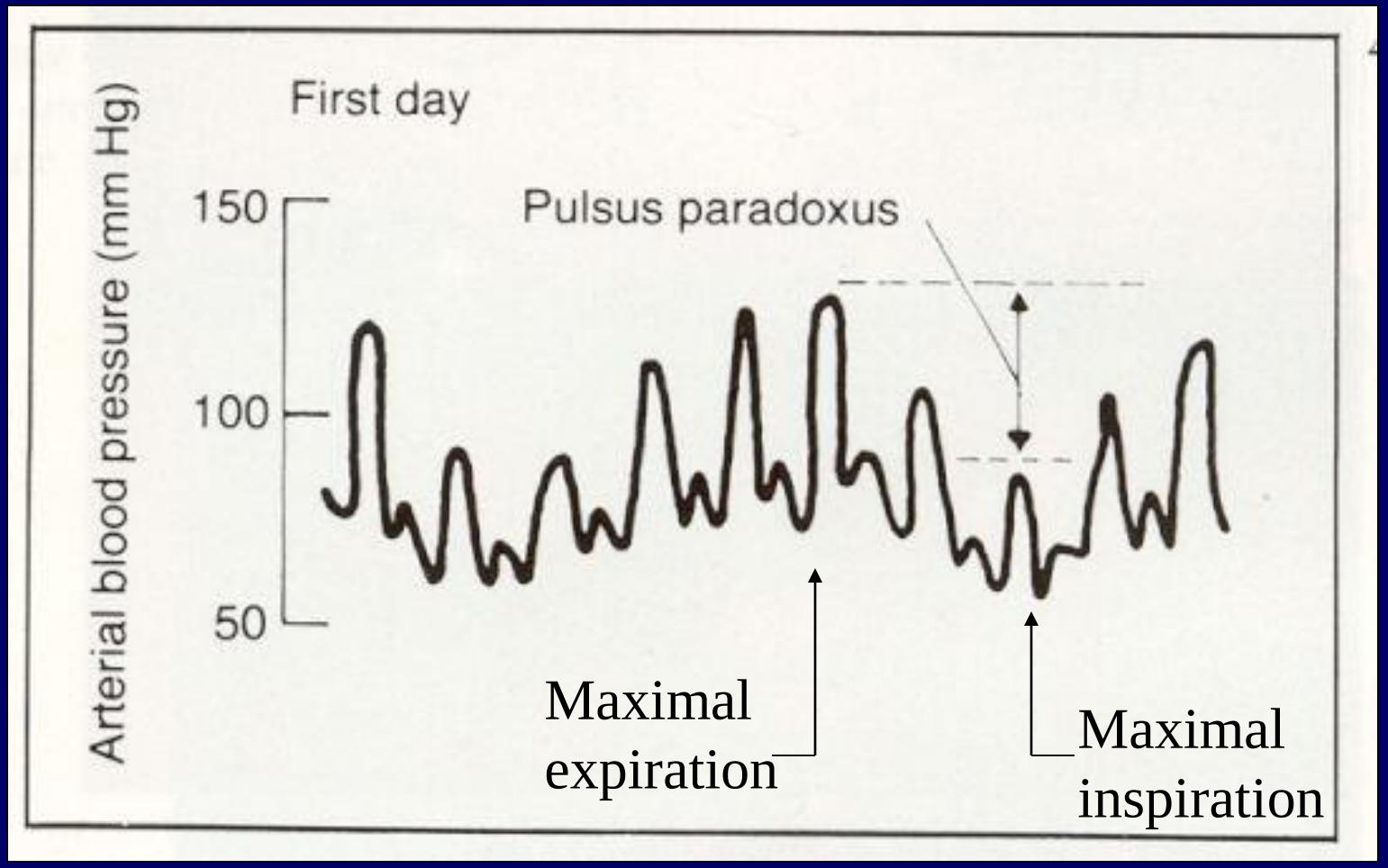
LIFE-THREATENING OR SEVERE ASTHMA

Asthma the patient can not control with the medication he has at home

Diagnosis:

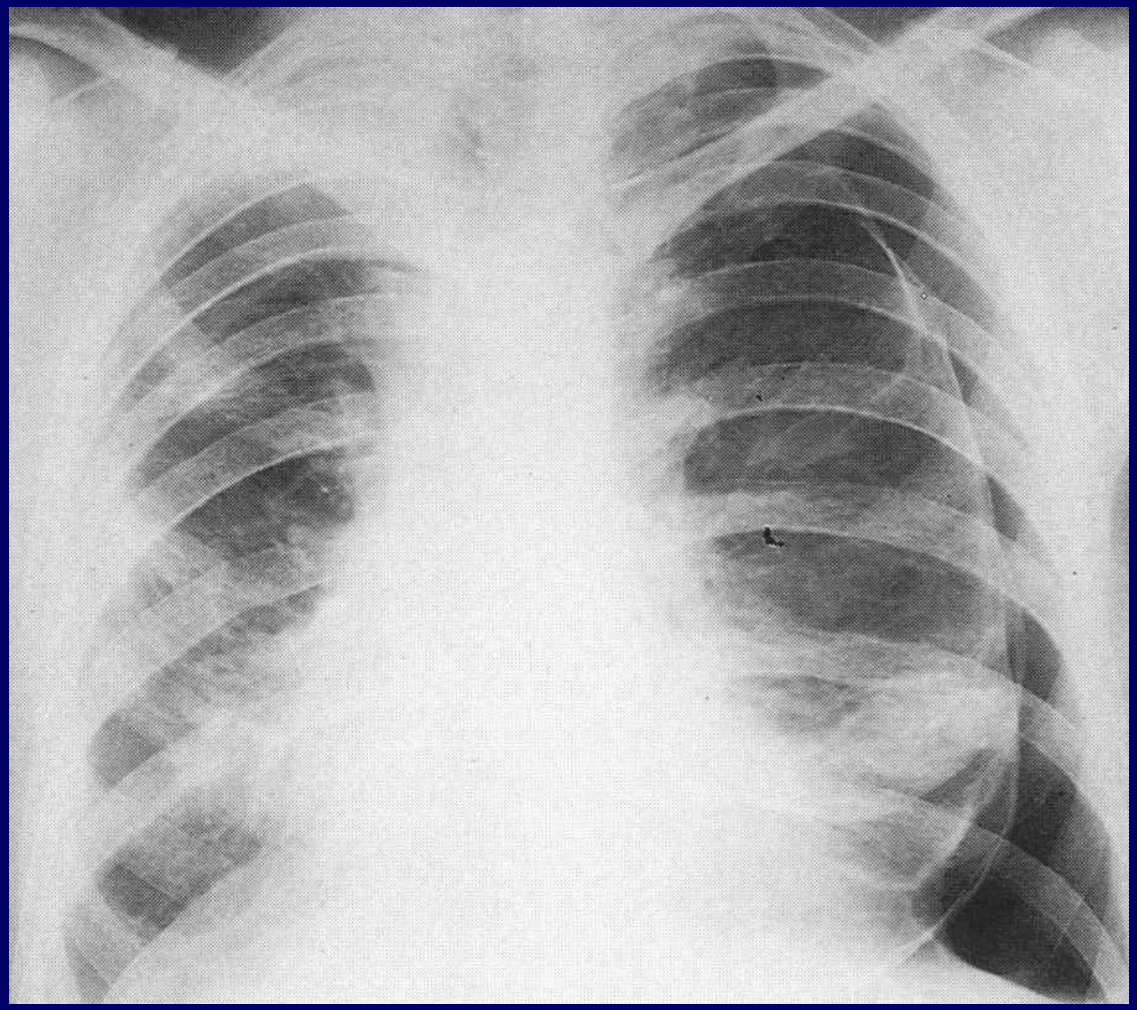
- History – previous ventilation/ICU admission, difficulty speaking
- Exam – confusion, cyanosis, tachycardia, pulsus paradoxus, hypotension, quiet chest
- Investigations – peak flow < 150 l/min, CXR, ABG

PULSUS PARADOXUS

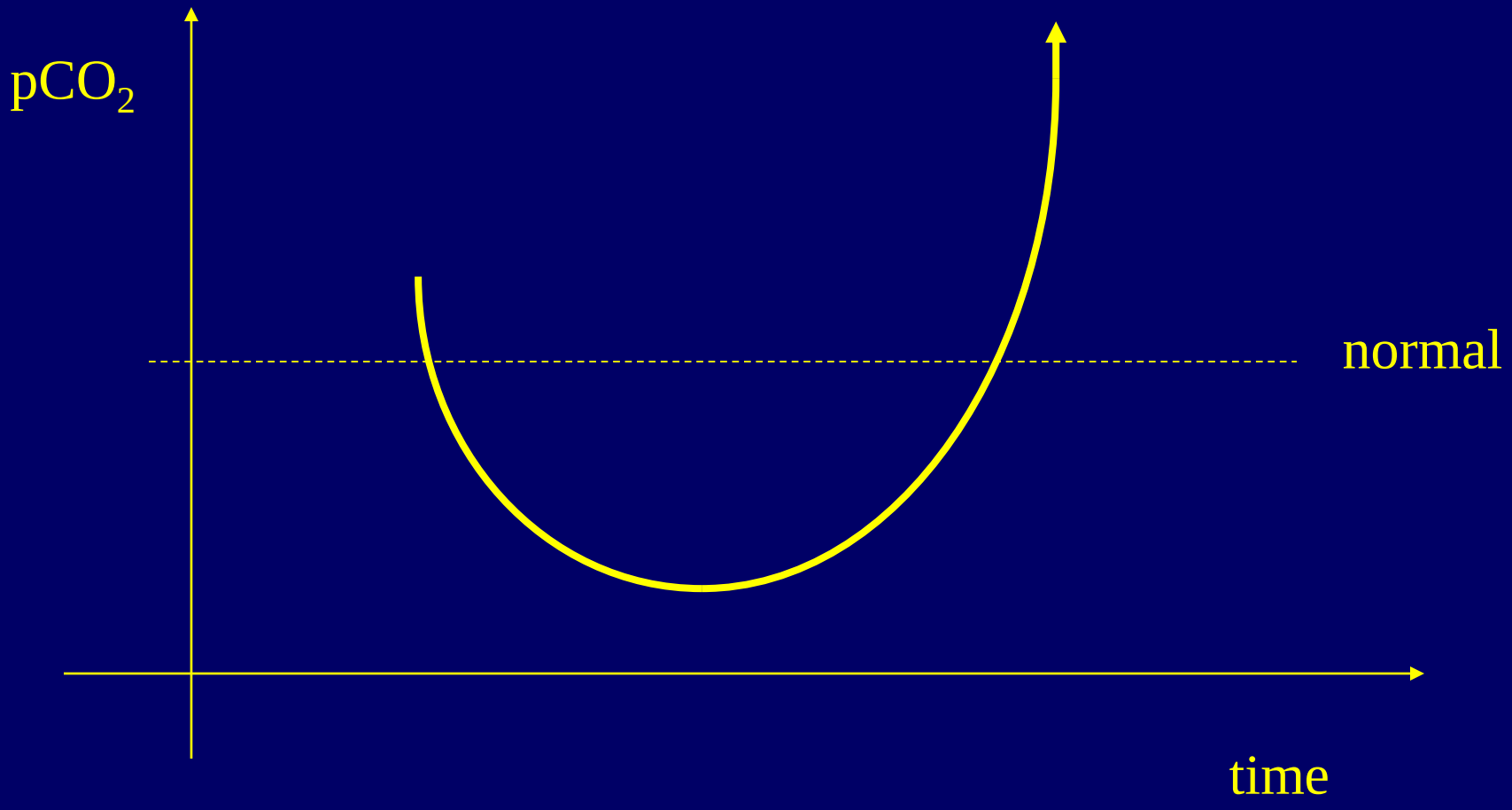


Value of investigation

PNEUMOTHORAX



pCO_2 AS ASTHMA WORSENS



EMERGENCY MANAGEMENT OF ASTHMA

Always remember:

- Management = assessment, treatment & review
- If condition deteriorates intubate before respiratory arrest

4 steps:

- Oxygen
- Nebulised ß$_2$ agonists
- Corticosteroids
- iv Bronchodilators

OXYGEN

In severe asthma:

- High dose as possible in asthma
  - $FIO_2 > 0.6$
- Face mask preferred to nasal canulae
- Beware COPD labeled as asthma

NEBULISED BRONCHODILATORS

Drug of choice: $ß_2$ agonist

- Salbutamol 5mg/terbutaline 250mcg
- How frequently?
  - balance benefit vs adverse effects
- Always drive with oxygen

- Can be alternated with ipatropium (500 μg)

CORTICOSTEROIDS

Useful rule: patient ill enough to come into hospital is ill enough to receive systemic steroids

- Prednisolone 30 - 40 mg po daily
  - onset 12-24 hrs
- Hydrocortisone 100 -200 mg iv tid
  - onset 6 - 8 hrs

IV BRONCHODILATORS

What's the choice?

Salbutamol

- 3-20 mcg/min

Aminophylline

- loading dose 250 mg iv slow infusion
  - is the patient on regular theophylline?
- maintenance 500 mg to 1 g per 24 hrs

COMMON ERRORS (1/2)

When to use antibiotics:

- Cough, sputum production and dyspnoea are features both of asthma and pneumonia
- In asthma sputum is mucoid, in pneumonia it is purulent
- Don’t routinely prescribe antibiotics in acute asthma
- Use other clues: fever, neutrophilia, CXR

COMMON ERRORS (2/2)

Don’t discharge too soon

SUMMARY

- 1) Management of chronic out-patient asthma
  - Inhaler technique
  - Need for a large volume spacer

- 2) Treatment of life-threatening or severe asthma

GUIDELINES

ON THE

MANAGEMENT OF ASTHMA

SRI LANKA MEDICAL ASSOCIATION

COLOMBO

2000