

## Referrology Series: Ep 6 – Asthma (Dr Andrew Li)

### Spirometry in Asthma (00:58)

- Spirometry has a diagnostic role in asthma for the demonstration of variable expiratory airflow limitation (**FEV1 increases by >200mL and >12% of the baseline value with bronchodilator**)
- Avoid spirometry in the acute setting because breathless patients will not be able to perform an adequate spirometry test
- Can perform spirometry in ~4 weeks post discharge
- Of note, 30% of labelled 'bronchitis' may represent first presentation of asthma
- The role for routine repeat spirometry is not as defined as for COPD – Most patients generally do not require routine spirometry trending, however there might be utility in poor symptom perceivers or patients with fixed airflow obstruction (e.g. COPD overlaps)

### Methacholine Challenge (04:10)

- Contraindications: FEV1 < 60% (at risk for severe exacerbation)
- Purpose: Usually to **RULE OUT** asthma in patients with normal spirometry

### Why PRN SABA is no longer recommended? (06:15)

- As asthma is a disease of chronic airway inflammation, PRN SABA does not address this problem
- PRN SABA ONLY is associated with increased risk of severe exacerbations and increased risk of mortality

### Why the hype with Symbicort (Budesonide-Formoterol)? (06:52)

- Formoterol has fast onset of action and hence can be used as a reliever
- Smart therapy: Symbicort as a reliever and preventer
- Recent studies have shown effectiveness with reduction in severe exacerbations with PRN use of Symbicort
- Landmark Trials
  - o SYGMA (NEJM 2018): Non-inferior compared to regular ICS + PRN SABA in terms of preventing severe exacerbations
  - o PRACTICAL (LANCET 2019): Lower severe exacerbations in symbicort group compared to ICS + PRN SABA
  - o NOVEL START (NEJM 2019): Superior to PRN SABA for reduction of exacerbations

### Symbicort PRN vs Regular ICS (10:42)

- While GINA guidelines does offer the option for PRN Symbicort for mild asthma, generally can give regular ICS upfront because may be difficult to assess true severity
- Can subsequently down titrate if symptoms remain well controlled

### Deciding on Inhalers (12:16)

- Principles
  - o Purpose of Inhaler: Asthma (prevention of exacerbations) vs COPD (bronchodilation for symptom relief)
  - o Premorbid: Stroke patients may have difficulty coordinating, RA hands may preclude use of accuhaler, inability to coordinate may require aerochamber
  - o Severity of disease: Medications used, dose of medications
  - o Cost: Seretide and symbicort are subsidized
- If on multiple inhalers, try to have a single type of device
- Poorly Controlled Asthma
  - o Ensure the following first: Correct diagnosis, medication (adherence, technique), control triggers/comorbidities
  - o **If low dose ICS ineffective, adding a LABA is more effective than increasing the steroid dose (addition of LABA happens at Step 3, while increment to medium dose ICS happens at Step 4)**

- o Caution with increasing dose of LABA + ICS formulations
  - § Caution of increasing too much of the LABA when intent is only to increase ICS
- For patients who are on ICS + PRN SABA
  - o If they have good understanding of medications and compliance, can continue
  - o But if they tend to overuse SABA, consider switching to Symbicort
- LTRA and Methylxanthine
  - o Potential role as adjunct
  - o Always go back to assessing why control is poor before employing adjuncts
  - o Montelukast 10mg ON
  - o Methylxanthine has fallen out of favour because of narrow therapeutic index

#### Counselling Regarding Relievers (21:53)

- Symbicort:
  - o Can take an additional 1-2 puffs as a reliever during exacerbations
  - o Max 12 puffs/day (including baseline prevention doses)
  - o If taking beyond that, should seek medical attention
- SABA:
  - o Generally counsel if there is an increase in use of salbutamol to seek medical attention

#### Short Term Increments as Part of Action Plan (23:45)

- Controversial as to whether to teach patients whether to increase baseline dose of maintenance ICS

#### Content of and Composition of Nebulisation (25:11)

- Usually SABA for asthma – Routinely 1ml salbutamol to 3ml normal saline
- Can add ipratropium in severe exacerbations
- May want to cut back on SABA in patients with severe tachycardia/AF – in those instances there might be a role for ipratropium
- For COPD generally give both SABA + Ipratropium

#### Take Home Points (27:25)

- Diagnosis of asthma requires symptoms that vary overtime and intensity + demonstration of variable expiratory airflow limitation (usually on spirometry)
- ICS mainstay of treatment for asthma
- Principles governing inhaler choice: 1. Intent of Inhaler 2. Device Suitability 3. Patient's Comorbidities 4. Patient's Understanding of Disease 5. Finances
- Assessment of Asthma Control: Daytime symptoms, night waking, reliever use, activity limitation
- First wheezes should be followed up because up to 30% of 'viral bronchitis' turn out to be asthma