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Asthma

- Atopy and Allergy
  - Allergy
    - IgE mediated hypersensitvity which manifests clinically
  - Atopy
    - Evidence of IgE hyperreactivity
- Type I Hypersensitivity Reaction
  - Airflow limitation
  - Inflammation of bronchi
- S&S
  - Symptoms
    - Intermittent dyspnoea, wheeze and noctural cough
    - Diurnal variation (worse in morning)
    - Acid reflux / disturbed sleep
    - Other topic disease
  - Signs
    - Tachypnoea
    - Audible wheeze
    - Hyperinflated chest
    - Hyperresonant
- Management
  - Diagnosis
    - Diurnal variation in PEFR > 20% for at least 3 days a week of 2 weeks
    - Spirometry: obstructive defect with at least 15% reversibility in FEV1 following beta agonist
  - Lifestyle
    - Stop smoking and avoid precipitants
    - Check inhaler technique
    - Educate
      - Monitor PEF twice a day
      - Alter medication according to symptoms
  - BTS Stepwise
    - Mild intermittent: PRN beta 2 agonist
    - Regular preventer: ass inhaled steroid
    - Initial add on: add on long acting beta 2 agonist
    - Persistant poor control: increase inhaled steroid and ass fourth drug
    - Continuous / frequent oral steroid
- Precipitating Factors
  - Occupational Sensitisers
    - IgE related: animals, flour, proteolytic enzymes
      - Atopic individuals develop asthma when exposed to agents causing development of IgE
    - Non IgE related: irocyanates
  - Cold air, exercise
    - Drying and cooling of bronchi drives release of histamine and leukotrienes
  - Drugs
    - NSAIDs
      - Reduction of prostaglandins induces production of leukotrienes by eosinophils and mast cells
    - Beta Blockers
      - Airways of lung have direct parasympathetic innervation which tends to cause bronchoconstriction
      - No sympathetic innervation so parasymptathetic antagonism is achieved via beta receptors
      - Blocking these receptors leads to bronchoconstriction
  - Diet
  - Emotion
  - Environment allergens
- Provocation Testing
  - Bronchial hyperresponsiveness demonstrated by patient inhaling increasing concentrations of histamine
  - Transient episode of airflow limitation in susceptible individuals