

## Biologics in rheumatology

### What are biologics

- Biologics are any medication synthesised or derived from biological sources
- In rheumatology, biologics are a subtype of disease-modifying antirheumatological drug (DMARD)
- They interfere with autoimmune processes by any of these:
  - Interfering with cytokine function
  - Inhibiting the second signal required for cytokine function
  - Depleting B-cells
- They are usually given once other DMARDS have been shown to be insufficient and require close monitoring

### Examples of biologics (with how often they are given and brand names)

- Anti-TNF
  - Infliximab (IV 6-8/52, 'Remicade')
  - Etanercept (SC 1/52, 'Enbrel')
  - Adalimumab (SC 2/52, 'Humira')
  - Golimumab (SC 1/12, 'Simponi')
  - Certolizumab (SC 2/52, 'Cimzia')
- Anti B cell
  - Rituximab (IV 6-12/12, 'Rituxan, MabThera')
  - Belimumab (IV 1/12, 'Benlysta')
- Anti-IL-1
  - Anakinra (SC OD, 'Kineret')
- Anti-IL6
  - Tocilizumab (IV 1/12, 'Actemra')
- Anti-CTLA4
  - Abatacept (SC 1/12, 'Orencia')

### How to start biologics

- Pre-treatment requirements
  - Screen for TB (CXR, Elispot)
  - Check Hep B, Hep C, HIV, VZV if history of chickenpox uncertain
  - Flu & pneumococcal vaccination
  - Consider varicella vaccine in those with negative VZV
  - Check immunoglobulins for rituximab

### Risks and cautions with biologics

- Contraindications to biologic therapy
  - Presence of serious active infection
  - Hep B/C & HIV relative contra-indications
  - Anti-TNF not recommended in malignancy
  - Anti-TNF not recommended in multiple sclerosis
  - NYHA stage III or IV heart failure
- Side effects and risks with biologics
  - Infection
  - Malignancy
    - Skin cancer, lymphoma
  - Lupus

- With anti-TNF, rare, mostly commonly manifests as rash
  - Demyelinating disease
  - Psoriasis may develop with anti-TNF
- Biologics in pregnancy
  - There is increasing use of biologics in pregnancy
  - Uncertainty about increased infection risk in early neonatal life
- Biologics and surgery
  - May need stopping e.g. two weeks prior to surgery but risks of flare must be weighed up