### **Treatments & Side Effects**

Dr David Kluth
Edinburgh Vasculitis Service

#### **Treatment**

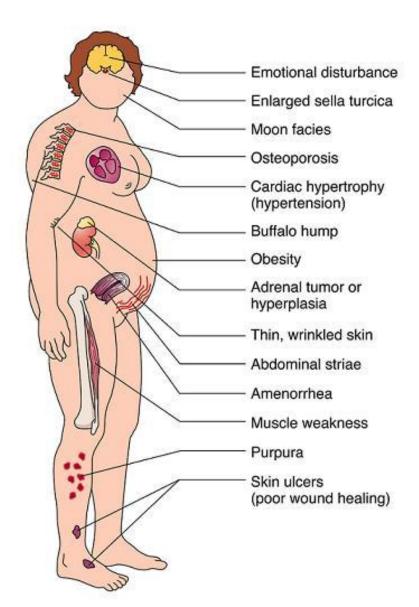
- Induction
  - Aim is to get disease to go away
  - Stop all inflammation and further damage

- Maintenance
  - Stop disease from coming back

### **Steroids**

 AKA prednisolone, hydrocortisone, methylprednisolone, glucocortocoids

### Steroids: Side effects



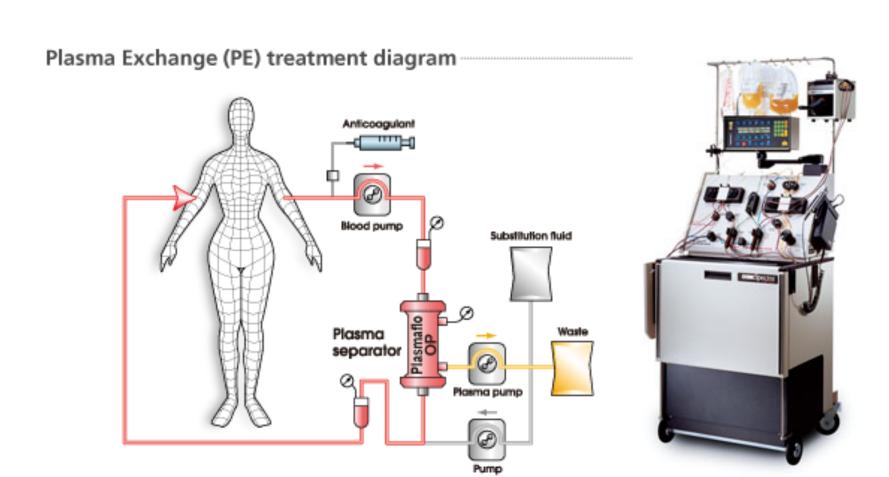
Diabetes
Glaucoma
Cataracts
Insomnia
Slow growth (children)
Thrush

### Steroids

- Key drug in treatment
  - Rapid control of inflammation

- Aim to reduce relatively quickly
  - Steroids are main cause of early infections

# Plasma exchange



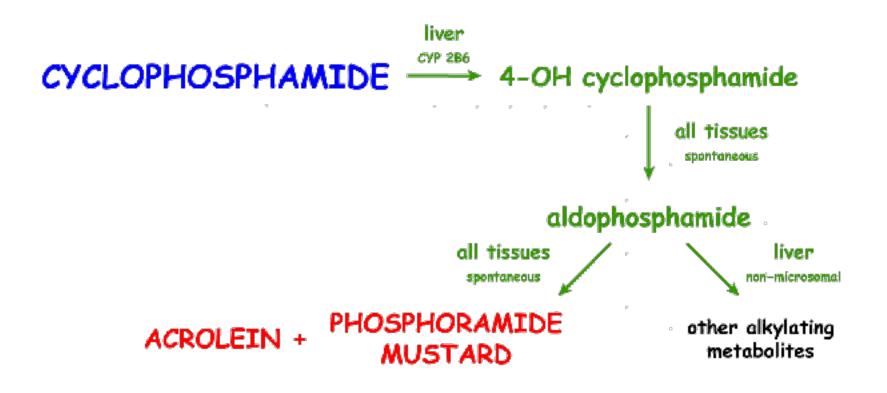
# Plasma exchange

 Removes antibodies (ANCA) and replaces with healthy plasma

Need to insert a cannula into a large vein

 Main risks are infection, increased risk of bleeding and low calcium

# Cyclophosphamide



Damages DNA causing cell death

# Cyclophosphamide

Can be given either orally or as an IV pulse

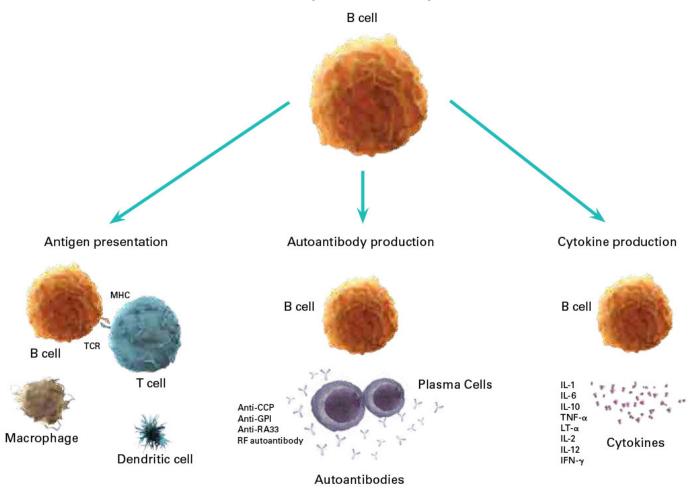
IV pulse gives less cyclophosphamide

# Cyclophosphamide: Side effects

- Nausea, vomiting
- Temporary hairloss
- Infections
- Low blood cell count
- Infertility
- Cancers
  - Bladder cancer
  - Other cancers

### Rituximab

Humanised mouse antibody that kills your B cells



### Rituximab: Side effects

- Allergic reaction
- Increased risk of reactivating hepatitis viruses
- May increase risk of other viral infections
- Some patients have reduced level of antibodies (hypogammaglobulinemia)

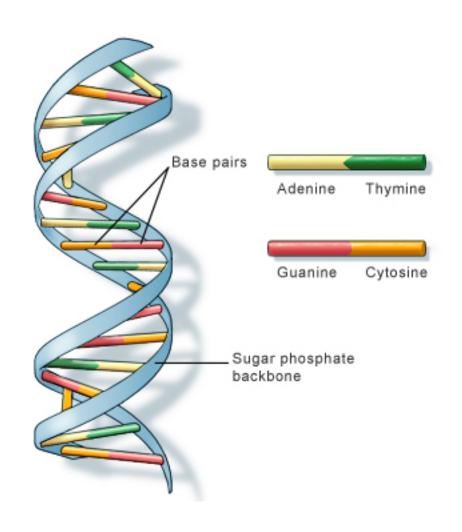
### Rituximab

Shown to be equivalent to cyclophosphamide

Very useful if disease relapses

Well tolerated

## Azathioprine



Our genes are made of DNA which go on to make all the building blocks of life

**Azathioprine reduces production of DNA** 

# Azathioprine: Side effects

Hepatitis

Low blood count, infections

Long-term increased risk of cancer

### Methotrexate

 Inhibits the vitamin folic acid which is needed to make DNA

Most patients have to take folic acid with it

# Mycophenolate mofetil

An alternative to azathioprine

Works in similar way

- Side effects
  - Diarrhoea

### Methotrexate: Side effects

- Lung scarring
  - Stop if you notice worsening breathlessness

- Liver scarring
  - Regular tests of liver function

Low blood counts

## Summary

- Drugs are powerful but effective
  - Most patients will go into remission

- Side effects are well known
  - Careful monitoring requiring
  - Aim for lowest dose to control disease
  - Most patients are able to stop drugs but disease may recur