# 1 Immunomodulators 2 🔳 3 🔳 4 💷 unwanted responses • 1 anaphylaxis histamine 2 antibody dependent • 3 complex mediated • 4 cell mediated 5 immune mediated disease allergic skin diseases autoimmune skin diseases • inflammatory bowel disease \* autoimmune haemolytic anaemia allergic rhinitis • graft / transplant rejection 6 limmunosuppressive drugs corticosteroids antihistamines azathioprine cyclosporin anticancer drugs 8 ocrticosteroids \* same drugs as for anti-inflammatory effect • much higher doses used more severe side effects 9 n side effects \* Cushing's syndrome 10 🔳 Cushing's syndrome

- thin skin
- alopecia
- muscle wasting
- pyoderma / calcification
- bruising
- liver dysfunction

### 11 mast cells

- activated by
  - IGE
  - complement
- release
  - histamine
  - heparin
  - prostaglandins
  - 5HT, PAF, LTs, ILs, etc., etc.

## 12 🔳 histamine

- gastric secretion
- smooth muscle contraction
- vasodilatation
- vascular permeability
- pruritus

#### 13 Image: 13 Image: 13 Image: 13 Image: 13 Image: 13 Image: 14 Ima

- acepromazine
  - promethazine
  - trimeprazine
- chlorpheniramine
- tripelennamine
- \* loratadine, terfenadine, astemizole

## 14 🔳 cyclosporin

• fungal peptide selective for T lymphocytes

- acts at induction stage
- expensive
- 15 💷

### 16 🔳 cyclosporin indications

- keratoconjunctivitis sicca
- anal furunculosis
- \* adjunct to other immunosuppressors
- (transplants)

### 17 side effects

- \* kidney failure in man not dogs &cats
- hair growth
- rarely lymphomata

### 18 🔳 similar drugs

- \* tacrolimus (FK506)
- sirolimus (rapamycin)
- mycophenolate
- leflunomide
- IL2 antibodies
  - basiliximab
  - daclizimab

# 19 🔳 azathioprine

- metabolised to mercaptopurine (antimetabolite)
- kills dividing cells
- more in cytotoxic drugs lecture

## 20 🔳 gold

- reduces phagocytosis
- \* knocks out platelets
- \* expensive
- lots of side effects (30% man)

## 21 💷 gold

- sodium aurothiomalate
- aurothioglucose
- auranofin

## 22 🔳 gold

- sometimes used for
  - pemphigus
  - plasmacytic stomatitis in cats
  - rheumatoid arthtitis in man
- contraindication
  - SLE

## 23 oxpentifylline

- PDE4 inhibitor
- useful effects???

#### 24 others

- various anticancer drugs
  - cyclophosphamide
  - chlorambucil
  - nasty drugs of last resort
- anabolic steroids?
  - danazol

### 25 🔳 immunostimulants

- levamisole?
- colony stimulating factors
- interleukins 3 & 6
- \* ampligen (interferon inducer)
- \* all extremely expensive
- \* BCG
  - cheap and nasty

- 26 TB testing
  - relies on type 4 reaction
- 27 🔳
- 28 problems?
  - tissue damage
  - infection
  - pain
- 29 10
  17
  - excise necrotic tissue
  - cyclosporin
  - antibiotics?
  - analgesics?
- 30 immunosuppressive drugs
  - glucocorticoids most effective
  - cytotoxics sometimes added
  - \* use as small a dose as possible
  - taper off
  - \* a variety of other drugs have been used but no clear indications yet