

- 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 immunosuppressive drugs
 - corticosteroids
 - antihistamines
 - azathioprine
 - cyclosporin
 - anticancer drugs
- 7
- 8 corticosteroids
 - same drugs as for anti-inflammatory effect
 - much higher doses used
 - more severe side effects
- 9 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 H1 blockers

- acepromazine
 - promethazine
 - trimeprazine
- chlorpheniramine
- tripeleennamine
- 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 arthritis 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
- ampliten (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 treatment?

- 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