

A photograph of a red mushroom with white spots, likely an Amanita muscaria, growing in a field of dry grass. The mushroom is the central focus, with its bright red cap and white spots contrasting against the dry, brownish-yellow grass. The text "Drugs and the Bladder" is overlaid in yellow on the mushroom's cap.

Drugs and the Bladder

common problems

- **cystitis**
- **urolithiasis**
- **incontinence**



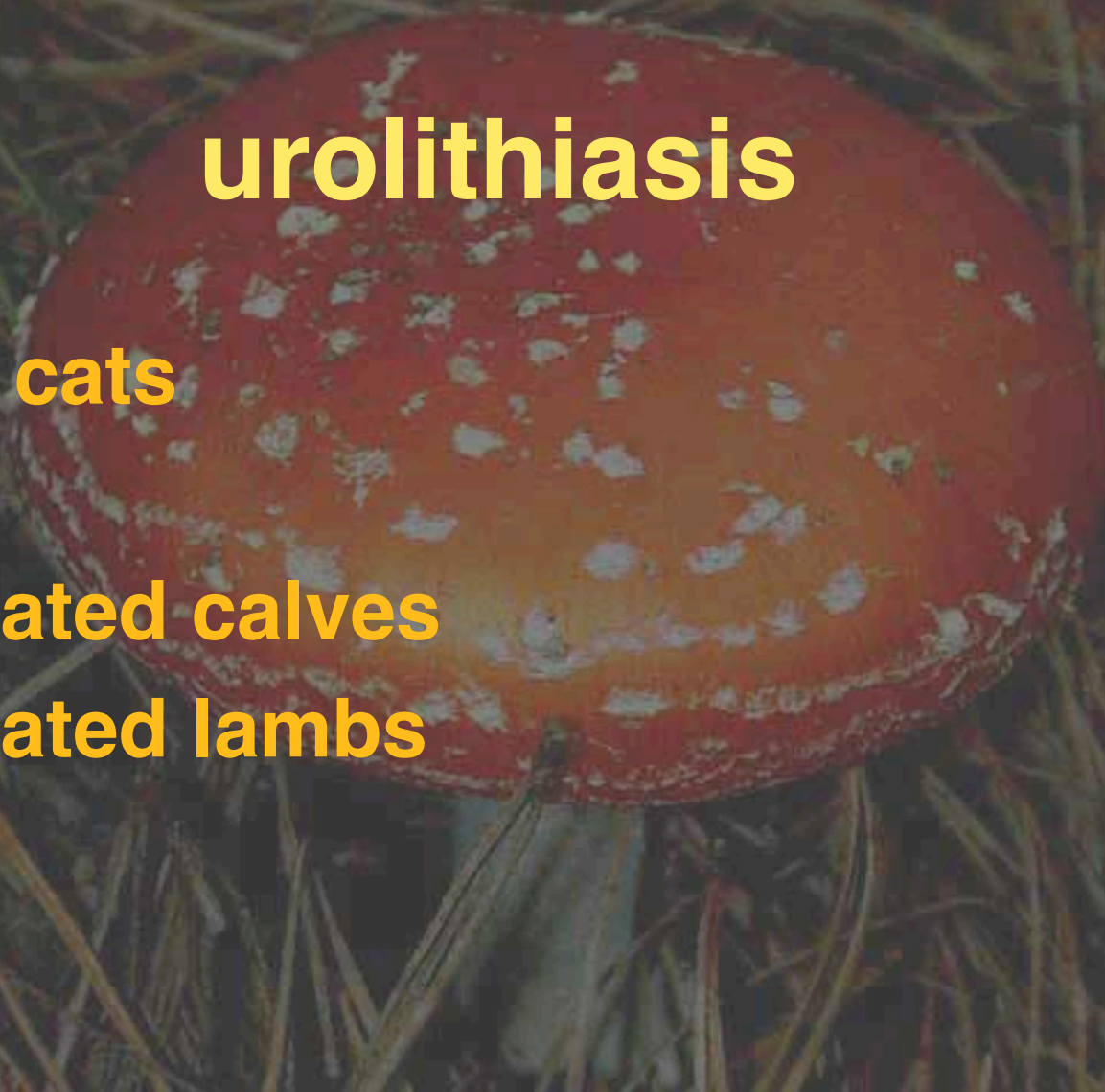
A red mushroom with white spots on a bed of dry grass. The mushroom is the central focus, with its cap showing a vibrant red color and several white, irregular spots. The stem is white and slightly textured. The background is a dense layer of dry, brown grass, creating a natural, earthy setting.

cystitis

- commoner in females
- usually *E. coli*
- broad spectrum antibacterial
 - penicillins
 - eg, amoxicillin
 - urinary antiseptic

urolithiasis

- male cats
- dogs
- castrated calves
- castrated lambs

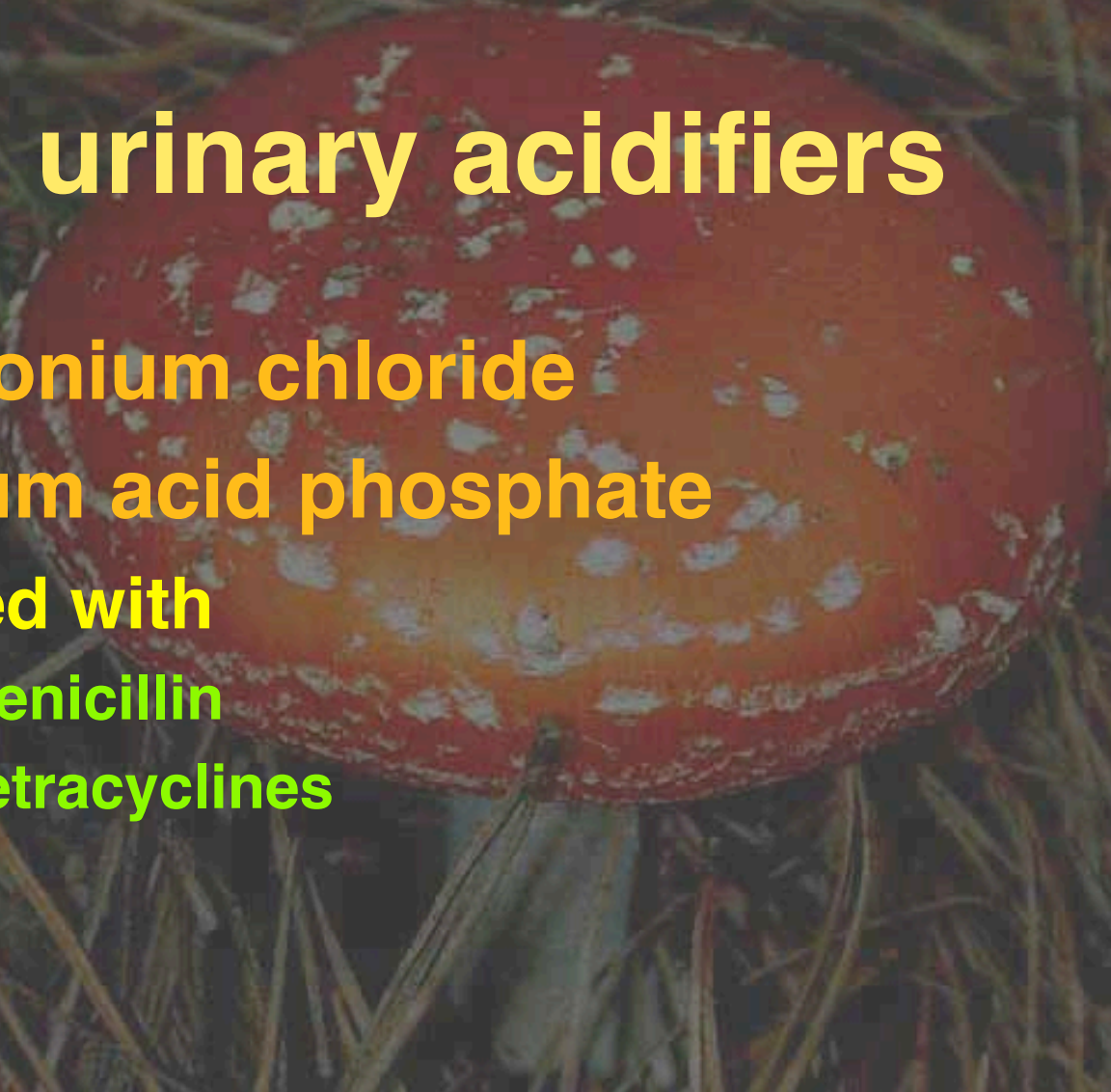


urolithiasis

- surgery & antibacterials
- dietary control
- drugs / medicated food to control pH
- diuretics??
- analgesics!

urinary acidifiers

- ammonium chloride
- sodium acid phosphate
 - used with
 - penicillin
 - tetracyclines



urinary alkalinisers

- sodium bicarbonate
- sodium acid citrate
 - used with
 - potentiated sulphonamides
 - erythromycin

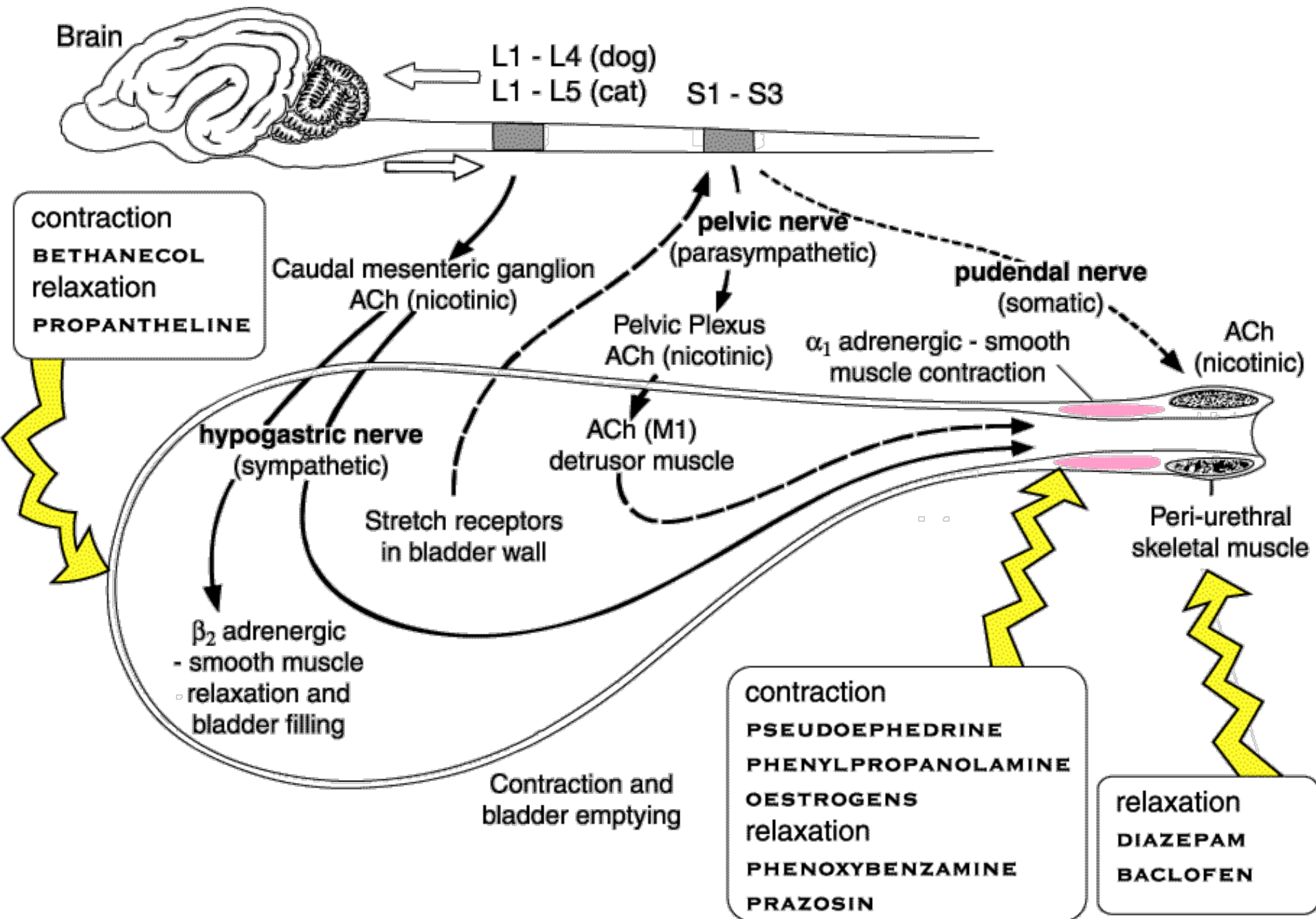
incontinence

- **detrusor instability**
 - **cystitis**
- **sphincter atony**
 - **spayed bitches**
- **detrusor paralysis**
 - **road accidents – spinal injury**

incontinence

A red mushroom with white spots, likely an Amanita muscaria, is growing in a field of dry grass. The mushroom is the central focus of the image, with its bright red cap and white spots contrasting sharply with the dry, brownish-yellow grass. The background is a dense field of similar grass, creating a textured, natural setting.

- **dribblers**
 - sphincter atony
 - overfull bladder
- **strainers**
 - cystitis
 - neoplasia
 - detrusor instability
 - sphincter incompetence
 - urolithiasis



dribblers

- sphincter atony
 - oestrogens & $\alpha 1$ agonists
- overfull bladder
 - bethanecol
- ectopic ureters
 - surgery



spayed bitches

- oestrogens
 - oestradiol inj
 - oestrogen tablets
 - ethinyloestradiol
 - oestriol
 - oestrogen conjugates
 - (stilboestrol)



spayed bitches

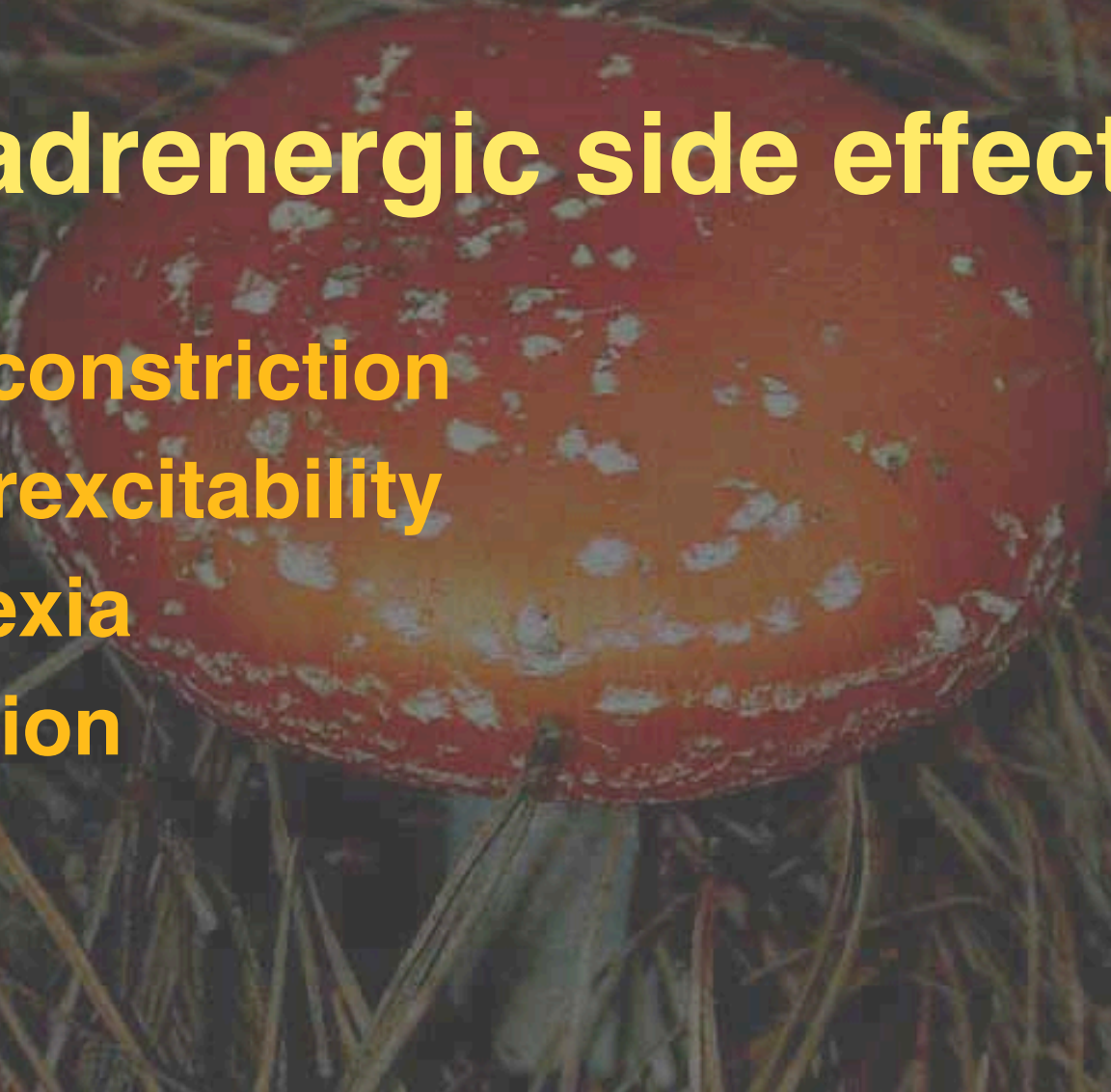
- $\alpha 1$ agonists
 - phenylpropanolamine
 - pseudoephedrine
 - ephedrine
 - P!!!

oestrogen side effects

- **bone marrow depression**
- **endometrial hyperplasia**
- **abortion if pregnant**
- **behavioural changes**
- **mammary tumours**

$\alpha 1$ adrenergic side effects

- **vasoconstriction**
- **hyperexcitability**
- **anorexia**
- **abortion**



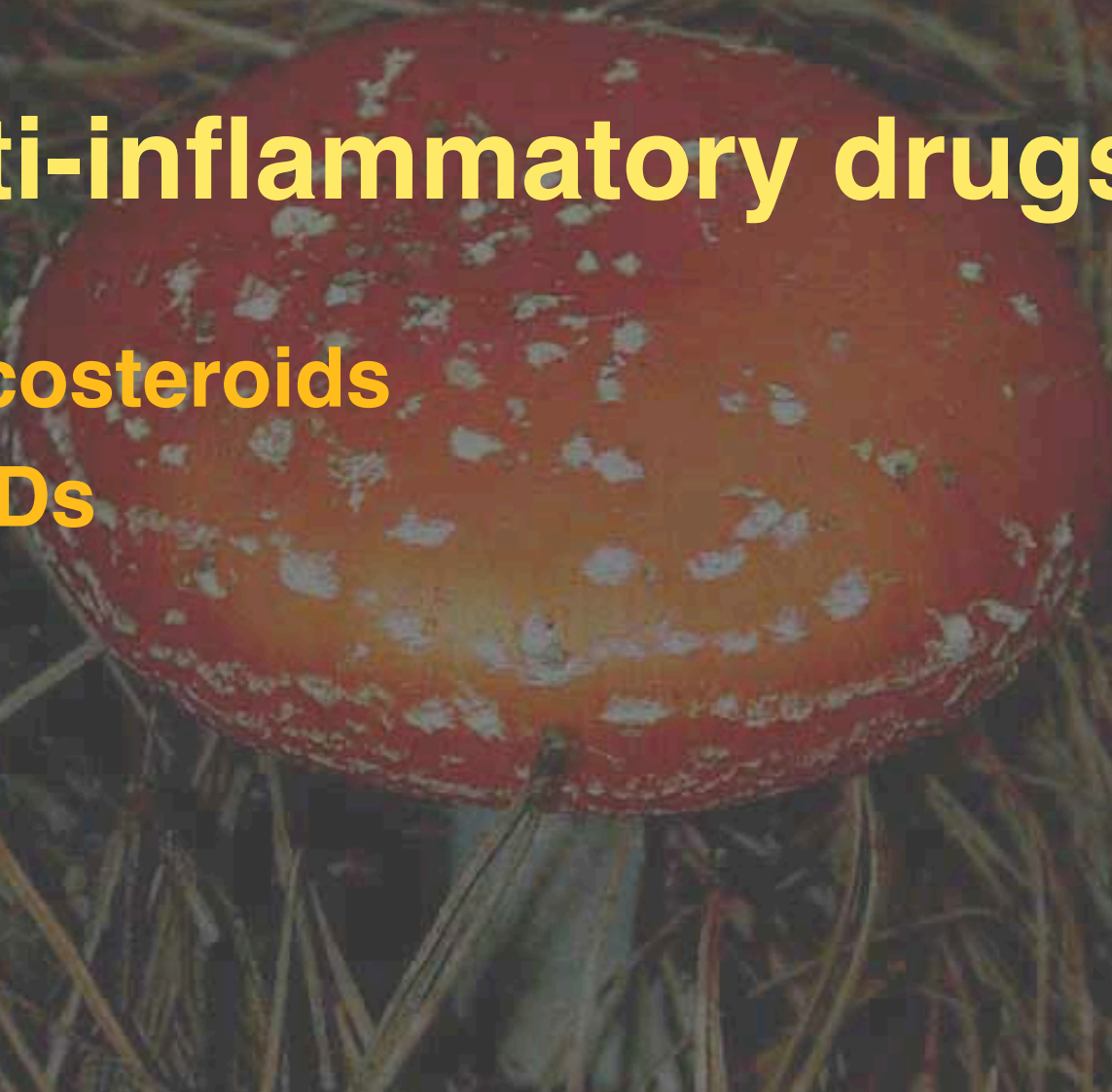
A red mushroom with white spots, resembling a fly agaric, is centered in the background. The text is overlaid on the left side of the image.

strainers

- **cystitis**
- **neoplasia**
- **detrusor instability**
 - **propantheline**
- **excess sphincter tone**
 - **phenoxybenzamine**
 - **diazepam**
- **urolithiasis**

anti-inflammatory drugs

- corticosteroids
- NSAIDs



7 yr old male Jack Russel

- frequent urination
- straining
- sometimes blood in urine



problems

- **prostatic hyperplasia**
- **infection?**



treatment

- oestrogens
- anti-androgens
- castration
- antibiotics?



8yr old male cat

- hit by car
- fractured pelvis
- not urinating
- large bladder



problems

- pelvic nerve damage
- detrusor atony



treatment

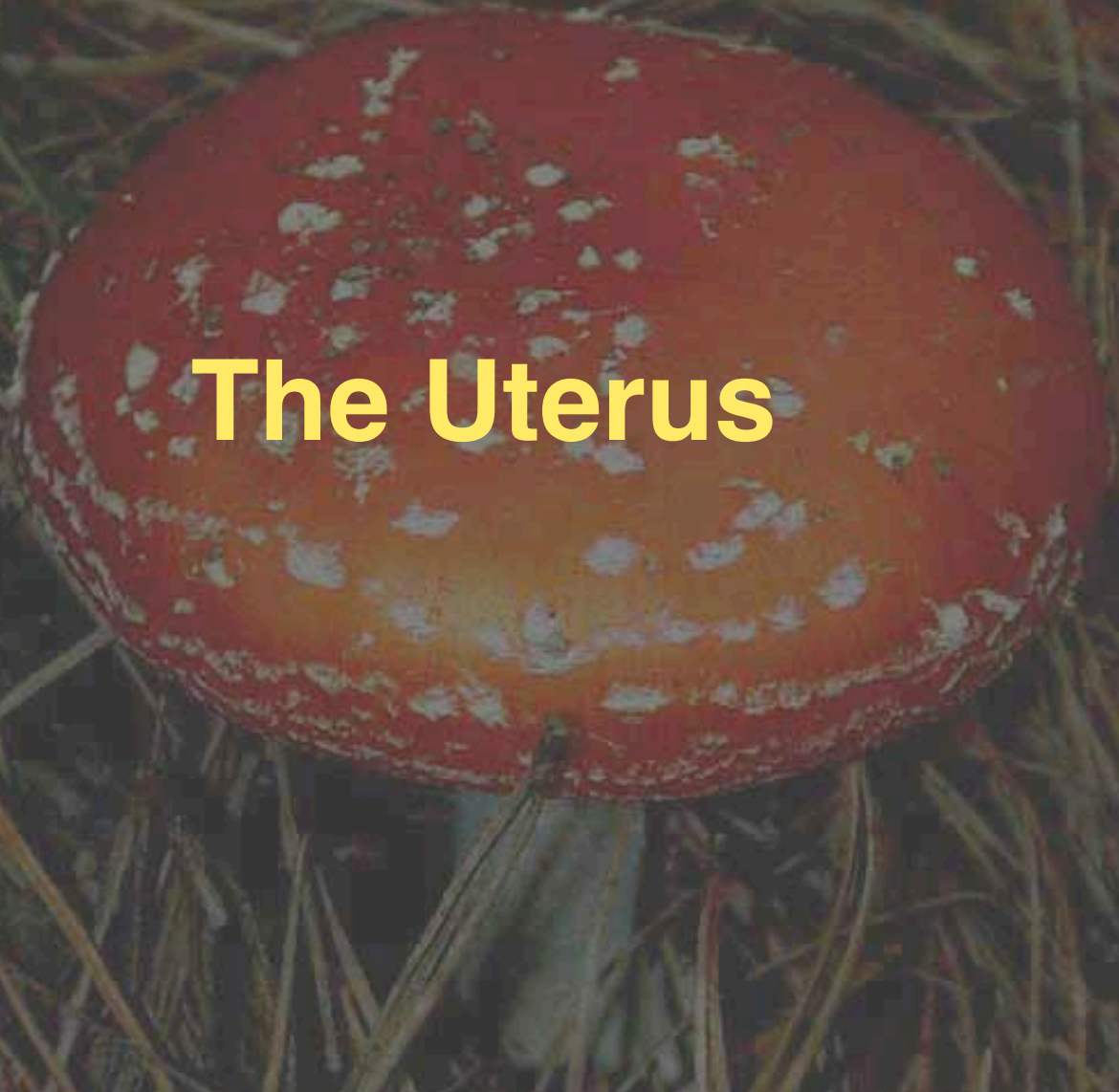
- muscarinic agonist
 - bethanecol
- (OP)



bladder

- **antibiotics (usually broad spectrum penicillins) used for cystitis ± urolithiasis**
- **oestrogens + α_1 agonists used for incontinence in spayed bitches**
- **bladder pH is sometimes manipulated to increase secretion of drugs or to dissolve uroliths**
- **drugs do not always work**

The Uterus



relaxants

- **clenbuterol**
- β 2 agonist
- **(nifedipine)**
- calcium channel blocker
- **(glycerol trinitrate)**
- converted to nitric oxide

relaxants

- used to delay parturition
- used in obstetrics
- abused as growth promoter



contraction

- **oxytocin**
- mainly large animals at parturition
- **(prostaglandin F2 α)**
- bitches
- care with handling
- women
- asthmatics

A red mushroom with white spots is centered in the background of the slide. The mushroom has a bright red cap with several white, irregular spots. It is growing in a field of dry, brown grass. The overall image has a dark, slightly desaturated background.

uterus

- clenbuterol is used to relax the uterus to postpone calving by about 6 – 12 hours
- oxytocin is used to promote uterine involution after parturition and to promote parturition in sows with uterine atony