

- blood
- colloids
- crystalloids

#### 11 <a>B</a> administration

- dose
  - as much as required
    - deficits
    - maintenance
- rate
  - as fast as needed
    - 90 10 ml/kg/h
- route
  - iv, po
  - ip, sc
  - intraosseus

# 12 monitoring effects

- central venous pressure
- pulmonary oedema
- ions

# 13 🔲 longer term priorities

- correct acidosis
- electrolytes
- \* calculate and give maintenance requirements
- \* treat the original problem!!

#### 14 🔳 iv fluids

- blood
- colloids
- crystalloids
- electrolyte additives
- parenteral nutrition solutions

# 15 🔳 for oxygen carriage

- whole blood
  - fresh
  - \* ACD / CPD
- packed cells
- (perfluorocarbons)
- (haemoglobin solutions)

# 16 for clotting factors

- fresh whole blood
- fresh frozen plasma
- (freeze dried clotting factors)

# 17 In for volume expansion

- colloids
- crystalloids
- hypertonic saline
- (blood)

### 18 🔳 colloids

- plasma
  - diy
- gelatins
  - Haemaccel
  - Gelofusin
- starches
  - hetastarch
  - pentastarch
  - dextrans

### 19 🔳 hypertonic saline

- NaCl 7% solution
- 20 🔳 for water & ions

- crystalloids
- strong electrolyte solutions

### 21 crystalloids

- normal saline NaCl 0.9%
- Hartmann's solution
  - compound Na lactate, lactated Ringer's
- \* NaCl 0.18% & dextrose 4%
- dextrose 5%
- Ringer's solution

#### 22 🗐 Hartmann's

- Na+ 129mM
- Cl- 109mM
- K+ 5mM
- Ca++ 2mM
- lactate 29mM
- water qs

#### 23 concentrated ions

- potassium chloride
- bicarbonate
- calcium (boro) gluconate
- magnesium hypophosphite
- \* magnesium sulphate

### 24 🔳 for parenteral nutrition

- lipid emulsions
- \* amino acid solutions
- propylene glycol
- propionate
- glycerol

# 25 🔳 What would you do?

- dog left in car on a hot day
- now collapsed
- temperature 42°C
- heart rate 148
- panting

## 26 🔳 problems

- hyperthermia
- dehydration

#### 27 treatment

- hose down with cold water
- 5% dextrose iv
- 0.18% saline & 4% dextrose iv

### 28 What would you do?

- bitch spayed that morning
- now collapsed
- pale mucous membranes
- heart rate 160, v weak pulse
- panting

## 29 🔳 haematology

- PCV 17%
- 30 🔳 problems
  - \* blood loss
  - hypovolaemia
- 31 🔳 dog needs...
  - plasma expander
  - red cells
  - clotting factors
- 32 🔳 fluids
  - in emergency any iv fluid is useful for plasma expansion

- hypertonic saline is a first aid measure only
- colloids stay in blood vessels, crystalloids redistribute to other compartments
- beware overdose of K+, Mg++ and bicarb