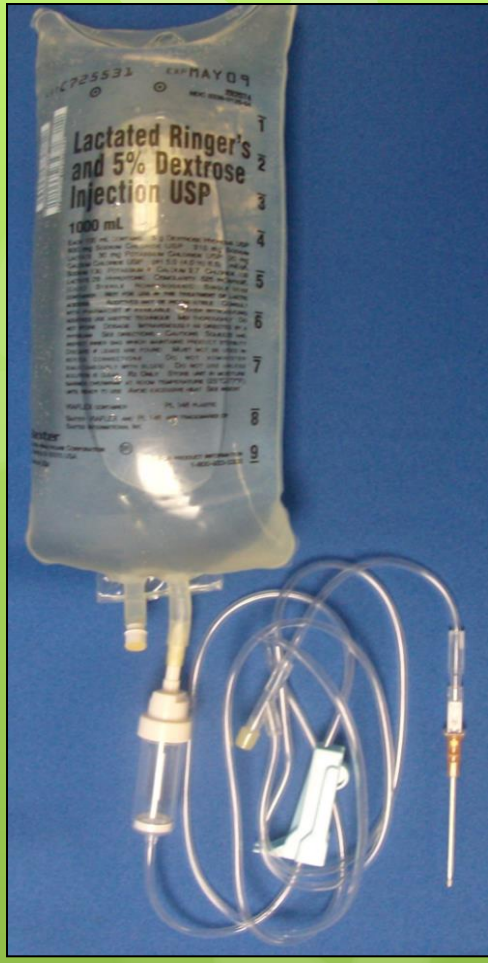
# FLUID THERAPY


There are three types of fluid disturbance:

1- Changes in volume (dehydration, blood loss).

2- Changes in content (hyperkalemia).

3- Changes in distribution (pleural effusion).

# Routes of Fluid Administration

| Route of administration | Advantages | Disadvantages |
|---|---|---|
| Oral | •Safest route<br>•Easy | •Less rapid absorption<br>•Possible aspiration<br>•Cannot use for vomiting animals |
| Subcutaneous | •Relatively easy to administer<br>•Absorption distributed over time | •Possible infection<br>•Must use isotonic fluids<br>•Slower absorption |

# Routes of Fluid Administration

| Route of administration | Advantages | Disadvantages |
|---|---|---|
| Intravenous | •Precise amount given is available rapidly<br>•Various tonicities of fluid can be used | •Possible fluid overload and vessel damage<br>•Requires close monitoring<br>•Must be sterile |
| Intraperitoneal | •Relatively rapid absorption<br>•Can be used when IV access is not available | •Possible infection<br>•Cannot use hypertonic solutions<br>•Abdominal surgery hindered after administration |

Fluid therapy in animals may involve the use of crystalloids and/or colloids.

*Crystalloids* are diffusible substances that dissolve in solution.

*Colloids* are nondiffusible substances.

# Types of Crystalloids

- Isotonic
  - 0.9% sodium chloride (normal saline)
  - Lactated Ringer's solution
  - Normosol®
  - Plasmalyte®
- Hypotonic
  - 5% dextrose in water ($D_5W$)
  - ¼ NS (0.25% normal saline)
  - ½ NS (0.45% normal saline)
- Hypertonic
  - 0.9% normal saline with 5% dextrose
  - 10% dextrose in water
  - 3% normal saline

# Types of Colloids

- Natural
  - Plasma
  - Albumin
  - Whole blood
- Synthetic
  - Dextrans
  - Hydroxyethyl starch
  - Oxypolygelatin

An isotonic solution has the same osmotic pressure as blood and extracellular water.

A hypotonic solution has osmolality lower than that of blood.

A hypertonic solution has osmolality higher than that of blood.

The clinical estimation of dehydration in animals by :

* Degree of skin turgor

* Dryness of m.m

*Sunken of eye

*The cornea become dull.

* However the horse may be 30% deficient in total body water before the skin is clinically abnormal.

*The water need for daily maintenance is estimated to be 40 ml / Kg  B.W. / 24 hrs( this is sufficient for all loss from the skin, respiratory tract, and for urine formation).

# Fluid Required

Fluid Required = Fluid replacement + Fluid Maintenance.

Fluid Replacement =

% Dehydration × Body weight × 1000 × 0.8

Fluid maintenance = (30 × Body weight) + 70

| % Dehydration | Eyeball Status | Skin Tent (in seconds) | Mucus membranes |
|---|---|---|---|
| 0 | None | <1 | Moist |
| 1-5 | None to Slight | 1-4 | Moist |
| 6-8 | Slight Separation | 5-10 | Tacky |
| **9-10** | **<5 mm gap** | **11-15** | **Tacky to dry** |
| **11-12** | **5-10 mm gap** | **16-45** | **Dry** |

# Emergency Drugs

- In an emergency situation, it is important to remember basic life support
  - A = airway = establish a patent airway (endotracheal tube, suctioning, tracheostomy)
  - B = breathing = provide oxygen to the patient by providing airway or mechanical ventilation
  - C = circulation = get blood moving, either by manual manipulation of the heart or by the use of drugs


THANK U 4 LISTENING