Administration of fluids is a commonly utilized procedure in veterinary medicine. Correct calculations of dose and rate of administration are essential to good patient outcomes. Below are commonly used parameters in fluid therapy management.

Fluid Therapy

Fluid Maintenance:

50-60ml/kg/day *e.g. 500 kg x 50ml/kg = 25,000ml/24 hours (25 Liters)*

Fluid Deficit:

Body Weight, (kg) X Dehydration *e.g. 500 kg x 0.07%, (7% dehydration), = 35 Liters*

Maximum Fluid Rate:

10-20 ml/kg/hr *e.g. 500kg x 10ml/kg/hr = 5000ml/hour, until deficit is replaced*

Dehydration Estimates

Dehydration	Skin Turgor	CRT	PCV	TP	Attitude
0.05%	> 2-3 Seconds	1-2 Seconds	40-50	6.5-7.5	Dull
0.07%	> 3-5 Seconds	2-3 Seconds	50-65	7.5-8.5	Depressed
0.10%	> 5 Seconds	> 4 Seconds	> 65	> 8.5	Shock

CRT=Capillary Refill Time **PCV**=Packed Cell Volume **TP**=Total Protein

Extra cellular Fluid, (ECF) space is estimated as 30%-60% of body weight, (kg):

Adult ECF = 30% *Neonate ECF = 60%*

Formula for Calculating Drip Rate

Total # of ml's x drip factor/total # of minutes/total # of seconds = drips/second

e.g. Dr's orders: Administer 1 Liter/hr of Normolsol R, (Administration set-15 drops/minute)

$$\frac{1000 \text{ ml}}{60 \text{ minutes}} \times \frac{15 \text{ drip factor}}{60 \text{ seconds}} = 4.2 \text{ drops/second}$$

1000 ml x 15 drip factor=15,000/60 minutes=250 drops minute/60 seconds=4.2 drops/second

Tech Tip

When attaching an extension set to a catheter, be sure to have the slide clip closest to the catheter before suturing. This will keep the blood flow from coming back into your extension set.

References

Seahorn,T, Seahorn, J, The Veterinary Clinics of North America Equine Practice; December 1994 Vol 10 Num 3. Fluid Therapy, pages 517 and 518.

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