Quick Guide Approach to Hypovolemic Shock

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- THERAPEUTIC TARGETS
- DOGS:
    - Cardiovascular:
        - HR < 140 BPM
        - Normal or improved pulse
        - Normal-to-injected mucus membrane color
        - Warm skin
        - CRT < 2 seconds
    - Noninvasive arterial pressure systolic (SAP) > 90 mmHg, mean arterial (MAP) > 60mmHg
    - Other:
        - Temperature > 100 F
        - Alert, oriented mentation
- CATS:
    - Cardiovascular:
        - HR > 160 BPM
        - Palpable or improved pulse
        - Normal-to-injected mucus membrane color
        - Warm skin
        - CRT < 2 seconds
        - Noninvasive arterial pressure systolic (SAP) > 90 mmHg, mean arterial pressure (MAP) >60 mmHg
    - Other:
        - Temperature > 100 F
        - Alert, oriented mentation
- Protocol for resuscitation

1. Evaluate patient condition and instrumentation
    a. ECG and SpO2 monitoring

b. Large bore peripheral catheter
c. If SpO2 < 94% or increased respiratory effort: Oxygen via face mask

2. Fluid Challenge, identification of hypoglycemia or electrolyte disturbances
    a. Fluid Challenge
        i. **Administer in under 10 minutes**
        ii. Warm isotonic crystalloid (**LRS or Norm-R**) at **20 to 40 ml/kg (dog) or 10 ml/kg (cat)**
        iii. If marked hypoproteinemia present consider **Vetstarch 5 to 10 ml/kg (dog) or 2.5 to 5 ml/kg (cat)**
        iv. **Re-assess every 10 minutes or sooner, see step 5 to 7**
    b. If hypoglycemic (< 60 mg/dl): administer 0.5 ml/kg of 50% dextrose IV, diluted 1:4
        i. Recheck within 15 minutes and supplement as needed
    c. Hypothermia
        i. Actively rewarm and monitor temperature continuously
3. **If sepsis or vasodilatory shock suspected**
    a. **Refer to Quick Guide for Vasodilatory Resuscitation**
4. Surgery for source control only when therapeutic goals met and stable and need to control active hemorrhage
5. Therapeutic Goals Met??
    a. Best accomplished by using a combination of crystalloid and colloids
    b. If goals not met after initial fluid bolus consider additional boluses (average 2-3), then reassess for why not stabilizing
6. Refractory to above
    a. Hypoxemia present – SpO2
    b. Recurrent hypovolemia – fluid challenge
    c. Hypoglycemia
    d. Hypokalemia
    e. Ongoing hemorrhage
    f. Arrhythmia
    g. Pericardial effusion
    h. Massive PTE
7. Continued supportive care and monitoring
    a. Maintain SpO2 >94%
        i. Nasal oxygen
        ii. Oxygen cage