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| Diseases | Fluid Treatment |
| **Abomasal Disorders and Upper GIT Obstruction** | Supplement older dairy cows with calcium as they develop a hypocalcemia early in the disease. Especially in the early postpartum period.  Ruminants with abomasal volvulus, abomasal impaction, or other forms of upper GIT obstruction such as intestinal volvulus or intussusception, normally have horrible fluid derangements due to the trapping of fluid and electrolytes.  Moderately to severe dehydration. Aggressive therapy.  Hypokalemia, hypochloreima, metabolic alkalosis, hypocalcemia and prerenal azotemia  To replenish fluid losses and improve circulating blood volume, an initial fluid bolus of 15 to 20L (20-25 ml/kg) of isotonic crystalloid solution should be administered prior to or during surgery.  Supplement ruminants with severe hypokalemia orally. Supplement with dextrose to cause a shift of potassium intracellularly.  Hypertonic solutions (7.2-7.5% NaCl) at a rate of 2-4 ml/kg can also be used to rapidly expand the intravascular volume in severely dehydrated cattle. |
| **Negative Energy Balance – Hepatic Lipidosis, Ketosis, Pregnancy Toxemia** | Vast majority of ruminants with type I ketosis respond quickly to simple treatments that usually involve the administration of glucose precursors (propylene glycol) and/or a single administration of intravenous dextrose. More severe conditions require a continuous rate infusion containing dextrose.  Main goal is to limit the mobilization of fat by offering an increase in glucose and glucose precursors.  Lactate clearance primarily in the liver. Avoid LRS. Impaired hepatocellular function. Confirmed metabolic acidosis means you also avoid saline solution. Compounds the acidemia.  Maintain blood glucose at 80-110 mg/dL to avoid hyperglycemia. Insulin can be used to promote glucose uptake and inhibit lipolysis.  B vitamins useful for anorectic animals. Fluids should contain potassium chloride (20-40 mEq/L) as most animals are anorectic and may experience a shift of potassium intracellularly in response to dextrose administration.  Provide cows with calcium to combat hypocalcemia.  Monitor phosphorous levels in plasma and serum when giving repeated doses of dextrose. |

**REFERENCES:-**

**Large Animal Internal Medicine, 5th ed. By Smith-Chapter 44; pgs 1388-1389**