IV Solution – Normal Saline

Normal saline is a volume expander that contains sodium as its major cation and expands the extracellular fluid space. NS is actually slightly hypertonic. While blood expands intravascular volume, NS expands extracellular volume (1/4 stays intravascular).

Indications and Administration

1. **T. K. O. -** Prophylactic IV for fluid and drug administration.
   a. **Adult -** run slowly, 5-10 drops/min, just to keep IV patent.
   b. **Pediatric -** run slowly, 5-10 drops/min, just to keep IV patent, use 60 drop/ml set unless need for fluid bolus anticipated.
2. Fluid Bolus - Fluid depletion (hypovolemic shock, dehydration).
   a. **Adult -** 20 ml/kg through large bore IV catheter as rapidly as possible.
   b. **Pediatric -** 20 ml/kg through large bore IV catheter as rapidly as possible.
   c. Consider calling medical control for consultation when giving multiple fluid boluses greater than 1 liter.
3. **Fluid Challenge -** Cardiac chest pain with hypotension or volume depletion with history suggestive for risk of fluid overload (e.g. congestive heart failure, cardiomyopathy, heart murmur or valvular heart disease, renal failure, ascites and cirrhosis of the liver).
   a. **Adult –** 100 – 250 ml rapidly and then reassess response (heart rate, blood pressure, lung sounds). May repeat if no contraindications such as crackles develop.
   b. **Pediatric –** 2 – 5 ml/kg rapidly and then reassess for response. May repeat if no contraindications develop.

Notes

1. All IVs should be run at a TKO rate unless a fluid bolus or fluid challenge is being administered.
2. Remember who is vulnerable to excessive fluid administration and watch your IV drip rates.
3. In extreme emergencies (cardiac arrest, major trauma), go for the best vein you can quickly locate with the largest needle you can insert.
4. IV's may be started enroute on major trauma patients.