Diabetes Insipidus (DI) Following Traumatic Brain Injury

Onset of dilute polyuria in the setting of TBI: **UOP > 300-600 ml/hour**

Other reasons for diuresis: Diuretics, large resuscitation, mannitol, hyperglycemia, cerebral salt wasting (see separate protocol)?

- **Yes**
  - Address cause of polyuria

- **No**
  - Urine Specific Gravity < 1.005
  - Urine osmolarity 50-200 mOsm/kg (less than serum)
  - Hypernatremia

  - **Yes**
    - If hypernatremia greater than desired in the setting of TBI/Hyperosmolar Therapy: (Na > 155-160)
      - Calculate free water deficit
      - Replace no more than 50% in the first 24 hours
      - Use ½ NS
    - If hypernatremia clinically acceptable: Replace volume losses with isotonic solution crystalloid if hypovolemic.

  - **Also**
    - If hypernatremia higher than clinically desired:
      - Start DDAVP 0.5-2 mcg IV Q 12 hours
      - Can increase frequency to Q 8 hours

  During therapy: Check electrolytes at least Q4 hours in the acute phase
  Follow urine specific gravity and urine Osms*
  Strict I&Os
  Sodium should not rise or fall greater than 1 mEq/h

*Post-DDAVP, DI patients should have a 50% increase in urine Osms. Patients without DI will show a normal response of a 5% increase in urine Osms. No change is seen in urine osmolality with nephrogenic DI.
References