INCREASED INTRACRANIAL PRESSURE

I. **Recognition**:
Decreased LOC, papilledema, tachycardia, hypotension, vomiting, irritability, photophobia, bulging fontanel, split sutures, sunset eyes (chronic), irregular respirations or apnea, and widened pulse pressures. Cushing's Triad (HTN, bradycardia, abnormal respirations) is a preterminal event.

II. **Etiologies of ICP**:
Meningitis, encephalitis, head trauma, intracranial mass lesions, child abuse (shaken baby), status epilepticus and shock.

III **Action**:

1. Assess and maintain ABC's. (RSI Intubation Therapy if airway protection needed)
2. Avoid Hypercarbia- keep PCO2 between 30 and 35. Hyperventilation to PCO_2 below mid 30's should be reserved for temporary treatment of major ICP spikes.
3. Keep PaO2 100 and/or saturations 97-100%.
4. Keep head midline and elevate 30 degrees.
5. Maintain mean arterial pressure at least 50 mmHg for Infants with open fontanel. Keep MAP 60 and 70 in older children and adolescents, respectively.
6. Avoid free water. Use isotonic fluid (NS) as base solution for IV hydration
7. Anticipate dopamine and dobutamine to maintain BP
8. If patient is anxious and agitated, sedate with Lorazepam and Fentanyl. Use paralysis if persistently agitated (if intubated).*Sedation will alter neurological exam.
9. Avoid excess noise, vibration, light and noxious stimulation that may increase ICP. Sedate with Midazolam IV or Fentanyl and Lidocaine IV / ETT, prior to suctioning.
10. Treat seizures aggressively. *Muscle relaxants will mask seizure activity
11. Keep cool and treat hyperthermia aggressively. May need to use neuromuscular blockade to avoid shivering.
12. Monitor Blood glucose. Add dextrose to IV fluids only after serum glucose range 80-110.
13. Place foley catheter.
14. Central Venous Pressure monitoring if available/indicated. Maintain CVP 5 - 8 cm H20.
15. If increasing signs of ICP appear or if pupils suddenly dilate, administer Mannitol 1 Gram/kg IV given over 20 minutes and/or Furosemide 1 mg/kg IVP with a maximum of 40mg/dose.
16. Thiopental 3 mg/kg IV may be given for continued evidence of increased ICP.
17. Consider 3% saline for volume expansion, hypotension or elevated ICP.