

drainage, and osmotic diuretics. Osmotic diuretics may provide rapid relief of increased ICP in emergency situations. Although their effect is transient, lasting only about 6 hours, they can be lifesaving in emergencies. These substances are rapidly excreted by the kidneys and carry with them large quantities of sodium and water. Mannitol (or sometimes urea) administered intravenously is the drug most frequently used for rapid reduction of ICP. The infusion is generally given slowly but may be pushed rapidly in cases of herniation or impending herniation. Adrenocorticosteroids are not recommended for cerebral edema secondary to head trauma. Arterial carbon dioxide (PaCO_2) should be maintained at approximately 30 mm Hg to produce vasoconstriction, which reduces CBF, thereby decreasing ICP.

Nursing Activities

In cases of high levels of increased ICP, procedures tend to trigger reactive pressure waves in many patients. For example, increased intrathoracic or abdominal pressure is transmitted to the cranium. Particular care should be taken in positioning these patients to avoid neck vein compression, which may further increase ICP by interfering with venous return.

Nursing Alert

The head of the bed is elevated 15 to 30 degrees, and position the child so that the head is maintained in midline to facilitate venous drainage and avoid jugular compression. Turning side to side is contraindicated because of the risk of jugular compression.

It is important to avoid activities that may increase ICP by causing pain or emotional stress. Clustering nursing activities together and minimizing environmental stimuli by decreasing noxious procedures help to control ICP. Range-of-motion exercises can be carried out gently but should not be performed vigorously. Nontherapeutic touch can cause an increase in ICP. Any disturbing procedures to be performed should be scheduled to take advantage of therapies that reduce ICP, such as osmotherapy and sedation. Make efforts to minimize or eliminate environmental noise. Assessment and intervention to relieve pain are important nursing