

syndrome of inappropriate antidiuretic hormone secretion (SIADH) and diabetes insipidus (DI) resulting from hypothalamic dysfunction (see [Chapter 28](#)). SIADH frequently accompanies CNS diseases, such as head injury, meningitis, encephalitis, brain abscess, brain tumor, and subarachnoid hemorrhage. In patients with SIADH, scant quantities of urine are excreted, electrolyte analysis reveals hyponatremia and hyposmolality, and manifestations of overhydration are evident. It is important to evaluate all parameters because the reduced urinary output might be erroneously interpreted as a sign of dehydration. The treatment of SIADH consists of fluid restriction until serum electrolytes and osmolality return to normal levels.

DI may occur after intracranial trauma. In DI, there is increased urinary volume and the accompanying danger of dehydration. Adequate replacement of fluids is essential, and observation of electrolyte balance is necessary to detect signs of hypernatremia and hyperosmolality. Exogenous vasopressin may be administered.

## **Medications**

The cause of unconsciousness determines specific drug therapies. Children with infectious processes are given antibiotics appropriate to the disease and the infecting organism. Corticosteroids are prescribed for inflammatory conditions and edema. Cerebral edema is an indication for osmotic diuretics. Sedatives or antiepileptics are prescribed for seizure activity. Sedation in the combative child provides amnesic and anxiolytic properties in conjunction with a paralytic agent. The combination decreases ICP and allows treatment of cerebral edema. Usual drugs include morphine and midazolam. Midazolam is attractive because of its short half-life.

Deep coma induced by administration of barbiturates is controversial in the management of ICP. Barbiturates are currently reserved for the reduction of increased ICP when all else has failed. Barbiturates decrease the cerebral metabolic rate for oxygen and protect the brain during times of reduced CPP. Barbiturate coma requires extensive monitoring, cardiovascular and respiratory support, and ICP monitoring to assess response to therapy. Paralyzing agents such as vecuronium may be needed to aid in performing diagnostic tests, improving effectiveness of therapy, and reducing risks of secondary complications. Elevation of ICP or