sodium must be monitored and adequate replacement provided to prevent depletion and its consequences. Some patients pass enormous amounts of electrolyte-rich urine.

Complications

The child with AKI has a tendency to develop water intoxication and hyponatremia, which makes it difficult to provide calories in sufficient amounts to meet the child's needs and reduce tissue catabolism, metabolic acidosis, hyperkalemia, and uremia. If the child is able to tolerate oral foods, food sources high in concentrated carbohydrate and fat but low in protein, potassium, and sodium may be provided. However, many children have functional disturbances of the gastrointestinal tract, such as nausea and vomiting; therefore, the IV route is generally preferred and usually consists of essential amino acids or a combination of essential and nonessential amino acids administered by the central venous route.

Control of water balance in these patients requires careful monitoring of feedback information, such as accurate intake and output, body weight, and electrolyte measurements. In general, during the oliguric phase, no sodium, chloride, or potassium is given unless there are other large, ongoing losses. Regular measurement of plasma electrolyte, pH, BUN, and creatinine levels is required to assess the adequacy of fluid therapy and to anticipate complications that require specific treatment.

Hyperkalemia is the most immediate threat to the life of the child with AKI. Hyperkalemia can be minimized and sometimes avoided by eliminating potassium from all food and fluid, reducing tissue catabolism, and correcting acidosis. Measures used for the reduction of serum potassium levels are oral or rectal administration of an ion-exchange resin, such as sodium polystyrene sulfonate (Kayexalate) and peritoneal dialysis or hemodialysis (see later in chapter). The resin produces its effect by exchange of its sodium for the potassium, thus binding potassium for removal from the body. This increased sodium concentration may contribute to fluid overload, hypertension, and cardiac failure. Dialysis removes potassium and other waste products from the serum by diffusion through a semipermeable membrane.

Hypertension is a frequent and serious complication of AKI, and to detect it early, blood pressure measurements are made every 4 to