



Acute Renal failure 急性腎衰竭(英文)

Definition

Acute Renal Injury is the rapid decline of renal function in a short period.

Etiology

1. Blood loss due to bleeding, burn, or surgery
2. Heart failure
3. Shock
4. Severe transfusion reactions, hemolysis
5. Malignant hypertension
6. Pyelonephritis, sepsis
7. Nephrotoxins
8. Acute nephritis
9. Urinary tract obstruction

Clinical stages

1. Oliguria phase: Decreased urine output (less than 400 ml/day) occurs and may persist for 1-4 weeks. It is not present in all cases of acute renal injury.
2. Diuretic phase: Due to some recovery of renal function in this phase, daily urine output increases. The volume is about 1-2 L/day or even up to 4-5 L/day. This phase may persist for 1 to 2 weeks.
3. Recovery phase: Renal function recovers gradually and returns to normal after 3-12 months. Mild to moderate damage due to acute renal injury may persist.

Symptoms

Acute renal injury may be asymptomatic, but some patients may suffer from worsening edema, decreased urine output, nausea, vomiting, fatigue,

hypertension, dyspnea, lethargy, headache, irritability, agitation, or even coma.

Treatment

The treatment strategy include abstinence from taking nephrotoxic drugs and foods, relief of urinary tract obstruction, adequate fluid supply, control of blood pressure, maintain adequate renal perfusion, appropriate timing of renal replacement therapy and diet control. The pivotal thing is to identify and resolve the etiology of acute renal injury. The renal function of majority cases of acute renal injury can be recovered with appropriate supportive care and resolution of disease etiology. However, in severe cases, the patient might be dialysis dependent. There are two modes of renal replacement therapy.

1. Hemodialysis: by using temporary vascular access and dialysis machine, doctors can remove the toxins and regulate fluids and electrolytes of patient' s body, in order to maintain the normal physiologic condition.
2. Peritoneal dialysis: by using specialized implanted abdominal catheter, doctors can introduce dialysis fluids into the patient' s peritoneal cavity to remove excess toxins and fluids from the body.

Precaution during renal replacement therapy

1. Monitor the body weight changes and record the daily amount of oral intake and urine output.
2. Keep the dialysis catheter (double lumen or peritoneal catheter) clean and do not twist nor pull it.
3. Increase intake of high biological value protein (animal protein) such as pork, beef, fish and avoid plant protein, such as soybean.
4. Restrict intake of water, salt and potassium-rich food (such as fruits, vegetables and soup). The restriction should be closely followed during the oliguria phase and can be lenient during the diuretic phase.

Conclusion

Acute renal injury is a temporary condition. By early identification of causative agents and appropriate supportive care, the renal function may recover and dialysis treatment can be discontinued. However, acute renal injury is a serious disease that has high mortality. It can also cause permanent renal failure that requires lifelong dialysis therapy or kidney transplantation.

