

Hepatorenal syndrome

Hepatorenal syndrome is a condition in which there is progressive kidney failure in a person with **cirrhosis** of the liver. It is a serious and often life-threatening complication of cirrhosis.

Causes

Hepatorenal syndrome occurs when there is a decrease in kidney function in a person with a severe liver disorder. Because less urine is removed from the body, nitrogen-containing waste products build up in the bloodstream (azotemia).

The disorder occurs in up to 1 in 10 patients who are in the hospital due to liver failure. It leads to kidney failure in people with:

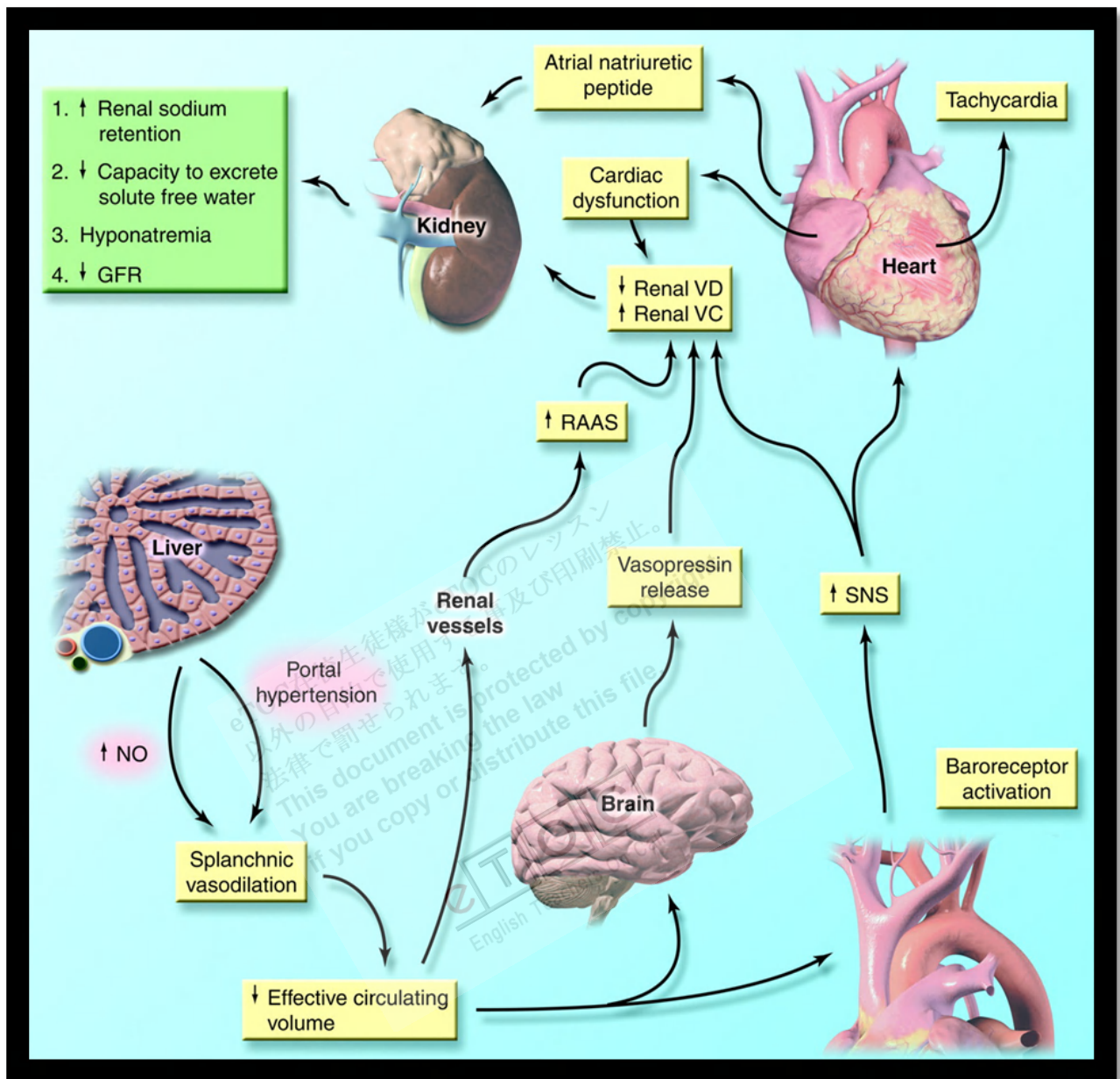
- Acute liver failure
- Alcoholic hepatitis
- Cirrhosis

Risk factors include:

- Blood pressure that falls when a person rises or suddenly changes position (orthostatic hypotension)
- Use of medicines called diuretics ("water pill")
- Gastrointestinal bleeding
- Infection
- Recent abdominal fluid tap (paracentesis)

Symptoms

- Abdominal swelling due to fluid (called ascites, a symptom of the underlying liver disease)
- Change in mental status
 - Confusion
 - Delirium
- Coarse muscle movements or muscle jerks
- Dark-colored urine (a symptom of the underlying liver disease)
- Decreased urine production
- Nausea and vomiting
- Weight gain
- Yellow skin (jaundice, a symptom of the underlying liver disease)



<http://cjasn.asnjournals.org/content/1/5/1066/F1.large.jpg>

Exams and Tests

This condition is diagnosed when other causes of kidney failure are ruled out by the appropriate tests.

A physical examination does not directly reveal kidney failure. However, the exam will usually show signs of chronic liver disease, including:

- Confusion (often due to hepatic encephalopathy)

- Excess fluid in the abdomen (ascites)
- Jaundice
- Other signs of liver failure

Other signs include:

- Abnormal reflexes
- Smaller testicle
- Dull sound in the belly area when tapped with the tips of the fingers
- Increased breast tissue (gynecomastia)
- Sores (lesions) on the skin

The following may be signs of kidney failure:

- Absent or low urine production, less than 400 cc/day
- Fluid retention in the abdomen or extremities
- Increased BUN and creatinine blood levels
- Increased urine specific gravity and osmolality
- Low blood sodium
- Very low urine sodium concentration

The following may be signs of liver failure:

- Abnormal prothrombin time (PT)
- Increased blood ammonia levels
- Low blood albumin
- Paracentesis shows ascites
- Signs of hepatic encephalopathy (an EEG may be performed if such signs are present)

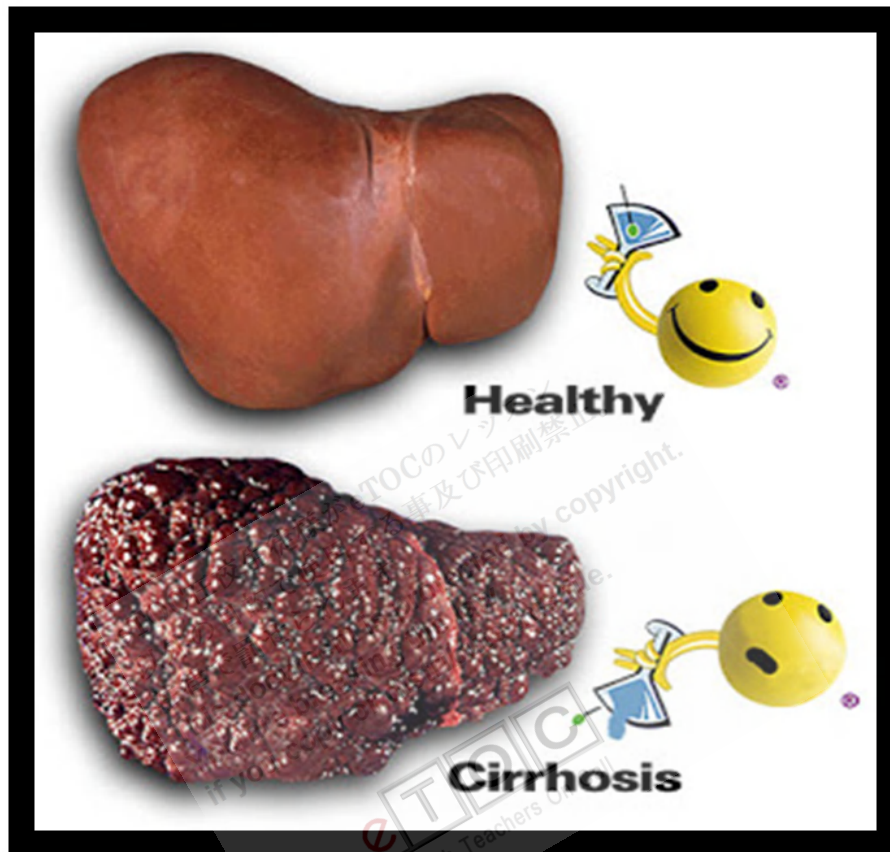
Treatment

The goal of treatment is to help your liver work better and to make sure your heart is pumping enough blood to your body.

Treatment is generally the same as kidney failure due to any cause.

- All unnecessary medicines should be stopped, especially ibuprofen and other NSAIDs, the antibiotic neomycin, and diuretics ("water pills").
- Dialysis may improve symptoms.
- Medications such as octreotide plus midodrine, albumin, or dopamine may be used to improve blood pressure and temporarily to help your kidneys work better.
- A nonsurgical shunt (known as TIPS) is used to relieve the symptoms of ascites and may help kidney function.

- Surgery to place a shunt (called a Levine shunt) from the abdominal space (peritoneum) to the jugular vein may also relieve some of the symptoms of kidney failure. Both procedures are risky and proper selection of patients is very important.



http://4.bp.blogspot.com/_AuwUApfRb4/SkQNgPHBIRI/AAAAAAAAAFUE/AxBKYFKWyXs/s320/cirrhosisi.jpg

Outlook (Prognosis)

The predicted outcome is poor. Death is usually the result of a secondary infection or severe bleeding (hemorrhage).

Possible Complications

- Bleeding
- Damage to, and failure of, many organ systems
- End-stage kidney disease
- Fluid overload with congestive heart failure or pulmonary edema
- Hepatic coma
- Secondary infections

When to Contact a Medical Professional

This disorder most often is diagnosed in the hospital during treatment for a liver disorder.

Reference: <http://www.nlm.nih.gov/medlineplus/ency/article/000489.htm>

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