

Cirrhosis with Decompensation

A scarred liver that can no longer hold things together.

THE STORY IN ONE SENTENCE

A scarred liver that can no longer hold things together.

“Decompensated cirrhosis is when a scarred liver finally stops doing its jobs — blood backs up and bursts veins, fluid fills the belly, ammonia fogs the brain, kidneys shut down, and infections take over.”

Normal anatomy — the body's job

The liver sits in the upper right part of your belly, tucked under your ribs. It is the size of a football and does more than 500 jobs to keep you alive. Blood flows into the liver from two sources: the hepatic artery brings oxygen-rich blood from the heart, and the portal vein brings nutrient-rich blood from your intestines, stomach, spleen, and pancreas. Inside the liver, that blood filters through tiny channels lined with liver cells that clean toxins, make proteins, store sugar, and break down old blood cells. After the liver does its work, clean blood flows out through the hepatic veins into the big vein that returns to your heart.

BODY'S JOB

The liver's main jobs are to filter and clean your blood, make proteins like albumin (which holds fluid inside your blood vessels) and clotting factors (which stop bleeding), store energy as glycogen, break down hormones and medicines, make bile to digest fat, and help your immune system kill bacteria. The portal vein normally carries blood at low pressure — around 5 to 10 mmHg — so blood flows smoothly through the liver's tiny channels and out the other side. This keeps everything balanced.

1. Blood full of nutrients and waste flows from your intestines and spleen into the portal vein.
2. That blood enters the liver at low pressure and spreads out through thousands of tiny channels called sinusoids, like water flowing through a sponge.
3. Liver cells lining those channels pull out toxins (like ammonia), add proteins (like albumin and clotting factors), store sugar, and package waste into bile.
4. Clean blood flows out of the liver through the hepatic veins and returns to your heart.

5. Bile drips into tiny tubes that join together and carry it to your gallbladder and intestines to help digest food.
6. Because the flow is smooth and open, pressure stays low and all the liver's jobs get done efficiently.

What breaks

Cirrhosis is what happens when the liver gets damaged over and over, and scar tissue replaces healthy liver cells. The most common causes are drinking too much alcohol for years, chronic hepatitis B or C virus infection, nonalcoholic fatty liver disease (often tied to obesity and diabetes), and autoimmune hepatitis (when your immune system attacks your liver). Other causes include bile duct diseases, inherited iron or copper overload, and some medicines. Every time the liver gets hurt, it tries to heal by laying down scar tissue, like a scab. But unlike skin, the liver scab is thick, hard, and permanent. Over time, the liver shrinks, gets lumpy, and the scar tissue blocks the normal flow of blood through those tiny channels. That makes pressure build up in the portal vein — portal high blood pressure (hypertension) — like a traffic jam. Blood has nowhere to go, so it backs up and finds detours through veins that are too thin and fragile to handle the load.

CLINICAL TERM

Decompensated cirrhosis

How the body compensates

For months or even years, the body hides how bad the liver damage really is. The heart pumps harder to keep blood pressure up. The spleen gets bigger to hold extra blood. Collateral veins open to reroute blood around the blocked liver. But these fixes only work for a while. Once the liver crosses a tipping point — often triggered by an infection, bleeding, dehydration, or constipation — the body cannot keep up anymore and decompensation happens suddenly. A patient who seemed stable can crash within hours.

1. At first, the liver has enough healthy cells left to keep making some albumin, clotting factors, and detoxifying chemicals, so the person feels fine or only a little tired.
2. As scar tissue grows, the heart pumps harder and faster to push blood through the liver and keep blood pressure normal. The person may not notice, but their resting heart rate creeps up.
3. The portal vein pressure rises, so blood backs up into the spleen, which swells up and traps and destroys blood cells. Platelet counts drop, but the person may not bleed yet because the liver is still making some clotting factors.

4. Collateral veins open in the esophagus, stomach, belly wall, and rectum to give blood a way around the blocked liver. These veins bulge and become fragile varices, but they do not bleed until pressure gets very high or something irritates them.
5. The kidneys hold onto sodium and water to try to keep blood volume up, so the person starts to swell a little in the ankles and belly, but it can look like normal weight gain.
6. This compensated phase can last years. The person may have no symptoms, or only vague fatigue, loss of appetite, and occasional nausea. Blood tests may show mild abnormalities, but nothing alarming.
7. Then something tips the balance — an infection, a bleed, drinking alcohol again, forgetting diuretic medicine, eating too much salt, getting dehydrated, or becoming constipated (so ammonia builds up). Any of these can push the liver past its limit.
8. Once decompensation starts, the liver cannot make enough albumin, so fluid pours into the belly (ascites) and legs (edema). It cannot clean ammonia, so the brain gets foggy (encephalopathy). Varices burst and the person vomits blood. The kidneys shut down. Infections take hold. The person who seemed okay last week is now in the ICU.
9. The crash happens fast because all the body's backup plans run out at once. A stable-looking patient on a slow downhill slope is not truly stable — they are one trigger away from falling off a cliff.

Domino effect

1. Years of liver injury from alcohol, hepatitis, or fat buildup scar the liver into a hard, shrunken, lumpy organ. — Scar tissue replaces healthy liver cells and blocks the tiny blood channels inside the liver, so blood cannot flow through smoothly anymore. This is the ONE upstream break that causes everything else.
2. Portal vein pressure rises above 10 mmHg, creating portal high blood pressure (hypertension). — Blood flowing from the intestines and spleen tries to enter the liver but hits a wall of scar tissue. Pressure builds up like water behind a dam. The body cannot lower that pressure because the blockage is permanent.
3. Blood reroutes through thin, fragile collateral veins in the esophagus and stomach, forming varices. — The body opens backup routes to get blood around the liver and back to the heart. But these veins were never meant to handle high pressure or high flow, so they swell up like overinflated balloons. When pressure gets too high, or the person vomits or eats rough food, the varices burst and bleed — sometimes pouring a liter of blood into the stomach in minutes.

4. High portal pressure squeezes fluid out of blood vessels into the belly, causing fluid buildup in the belly (ascites). — The pressure pushes watery fluid (plasma) through the walls of capillaries in the intestines and liver surface. At the same time, the liver is making less albumin, so there is not enough protein to hold fluid inside the blood vessels. Gravity pulls the fluid down into the belly. The person's abdomen swells, they gain weight, and breathing gets harder because the fluid pushes up on the lungs.
5. The liver stops making enough clotting factors, so the person bleeds and bruises easily. — Clotting factors II, VII, IX, and X are made only in the liver. When the liver is too scarred to make them, even a tiny cut or needle stick can bleed for a long time. The INR (a measure of clotting time) goes up, often above 1.5 or even 2.0. This makes variceal bleeding even more dangerous because the blood will not clot to stop the bleeding.
6. Ammonia and other toxins build up in the blood and poison the brain, causing hepatic encephalopathy. — Normally, the liver breaks down ammonia (made by gut bacteria digesting protein) into urea, which the kidneys pee out. But a scarred liver cannot do that job, and some blood bypasses the liver entirely through collateral veins, so ammonia goes straight to the brain. Ammonia makes brain cells swell and stops them from sending signals properly. The person becomes confused, sleepy, forgetful, or even combative. In severe cases, they slip into a coma. Triggers include eating too much protein, getting constipated (so ammonia sits in the gut longer), bleeding into the gut (blood is protein), infection, or dehydration.
7. The kidneys shut down even though they are not diseased, causing hepatorenal syndrome. — The kidneys sense that blood flow is low because so much blood is backed up in the portal system or shunted through collateral veins. They think the body is dehydrated, so they release hormones that squeeze their own blood vessels shut to save water. This creates a vicious cycle: less blood flow means the kidneys clamp down harder, which makes blood flow even worse. Creatinine rises, urine output drops, and the person needs dialysis — but the kidneys themselves are fine. If the liver recovers or is transplanted, the kidneys wake up again.
8. Bacteria grow unchecked in the fluid in the belly or in the bloodstream, causing spontaneous bacterial peritonitis or sepsis. — The liver normally filters bacteria out of the blood and makes immune proteins. A failing liver cannot do either job well. Gut bacteria leak through the intestine wall into the fluid buildup in the belly (ascites) fluid, where they multiply freely because there are not enough white blood cells or antibodies to kill them. The person develops belly pain, fever, confusion, and low blood pressure. Without fast antibiotics, the infection spreads to the blood and becomes sepsis, which can be deadly.

9. All these complications — bleeding, fluid buildup in the belly (ascites), encephalopathy, kidney failure, infection — pile up and feed each other, and the person spirals downward unless each domino is stopped. — Bleeding causes anemia and drops blood pressure, which triggers encephalopathy and kidney shutdown. Infection causes inflammation, which worsens encephalopathy and makes the kidneys fail faster. Fluid buildup in the belly (Ascites) presses on the lungs and makes breathing hard, which stresses the heart. Every complication makes the others worse. The only way to break the cycle is to treat each problem aggressively (stop the bleeding, drain the fluid, clean the toxins, give antibiotics, support the kidneys) and, if possible, replace the liver with a transplant. Without treatment, decompensated cirrhosis is fatal within months to a couple of years.

Symptoms · what the patient feels, and why

- Fluid building up in the belly (ascites): The scarred liver cannot make enough albumin (a protein that holds fluid in the blood vessels), and high pressure in the portal vein (the main vein to the liver) pushes fluid out into the belly.
- Yellow skin and eyes (jaundice): The damaged liver cannot process bilirubin (a yellow waste from broken-down red blood cells), so it builds up in the blood and stains the skin and whites of the eyes.
- Confusion or sleepiness (hepatic encephalopathy): The failing liver cannot filter ammonia and other toxins from the blood, so these poisons travel to the brain and interfere with thinking and awareness.
- Vomiting blood or black, tarry stools: High pressure in the portal vein causes veins in the esophagus or stomach (varices) to swell like balloons and burst, leading to dangerous bleeding.
- Easy bruising or bleeding that won't stop: The liver makes clotting factors (proteins that help blood form clots), and when it fails, the body cannot plug holes in blood vessels quickly.
- Swollen legs and ankles (edema): Low albumin and high portal-vein pressure let fluid leak out of blood vessels into the tissues, especially in the legs where gravity pulls fluid down.
- Feeling very tired and weak: The liver is the body's energy factory; when it fails, toxins build up, nutrients are not processed well, and the whole body runs low on fuel.
- Belly pain or infection of the fluid (spontaneous bacterial peritonitis): Bacteria from the gut can cross into the fluid buildup in the belly (ascites) fluid because the immune system is weak and the gut wall is more leaky, causing a serious infection.
- Loss of appetite and weight loss (muscle wasting): The sick liver cannot store or release sugar properly, and the body starts breaking down muscle for energy, while nausea and early fullness from fluid buildup in the belly (ascites) make eating hard.

- Urine output dropping sharply (hepatorenal syndrome): Severe liver failure causes blood vessels in the kidneys to clamp down, starving the kidneys of blood and making them shut down even though they are not diseased themselves.

Focused exam

- Vomiting blood or black tarry stool: The scarred liver blocks blood flow like a clogged pipe, so pressure builds in the veins of the stomach and esophagus. Those veins swell (varices) and can tear, causing life-threatening bleeding.
- Belly swollen with fluid (ascites), legs and ankles puffy: The failing liver cannot make enough albumin, a protein that holds water inside blood vessels. Water leaks into the belly and legs. This shows the liver is losing its basic jobs.
- Confused, sleepy, or hard to wake up (hepatic encephalopathy): The damaged liver cannot clean ammonia (a poison made by gut bacteria) from the blood. Ammonia crosses into the brain and slows thinking. This can worsen quickly and lead to coma.
- Yellow skin and eyes (jaundice), dark tea-colored urine, pale gray stools: The failing liver cannot break down bilirubin, a yellow waste from old red blood cells. Bilirubin backs up in the blood and spills into the skin and urine. This signals worsening liver shutdown.
- Easy bruising, bleeding gums, or nosebleeds that won't stop: The damaged liver stops making clotting proteins. Without these, even small injuries can bleed heavily. Any new bleeding can be dangerous in someone with cirrhosis.
- Low blood pressure, fast heart rate, cool pale skin: The failing liver loses control of blood vessel tone. Blood pools in the belly instead of circulating to the brain and organs, which can lead to shock.

Diagnostics · every test answers a question

- Complete Blood Count (CBC) → Are the red cells, white cells, and platelets low because the liver and spleen are failing?
- Comprehensive Metabolic Panel (CMP) including creatinine and sodium → Are the kidneys shutting down, and is the body holding onto water?
- Liver function tests (AST, ALT, bilirubin, albumin, INR) → How badly is the liver damaged, and can it still do its main jobs?
- Ammonia level (venous or arterial) → Is ammonia poisoning the brain and causing confusion?
- Paracentesis (belly fluid tap) with cell count, albumin, and culture → Is the belly fluid infected (spontaneous bacterial peritonitis, SBP), and is the liver making enough protein?

- Upper endoscopy (esophagogastroduodenoscopy, EGD) → Are there swollen veins (varices) in the esophagus or stomach that could bleed?
- Abdominal ultrasound with Doppler → Is blood flowing backward or clotting in the liver vessels, and is the liver shrunken and scarred?
- Model for End-Stage Liver Disease (MELD) score → How close is this person to dying without a liver transplant?

Treatment logic

- Octreotide IV drip + urgent upper endoscopy with band ligation or sclerotherapy for variceal bleeding → Octreotide squeezes blood vessels in the gut to slow bleeding. Banding physically ties off the torn veins so they stop leaking. Together they stop the person from bleeding to death and going into shock.
- Ceftriaxone 2 g IV daily (or norfloxacin oral if stable) to prevent or treat spontaneous bacterial peritonitis (SBP) → Kills bacteria in the belly fluid and bloodstream before they cause sepsis (life-threatening infection). The damaged liver cannot fight infection well, so antibiotics buy time and prevent death.
- Lactulose syrup (20–30 g every 1–2 hours until bowel movement, then adjusted) + rifaximin 550 mg twice daily for hepatic encephalopathy → Lactulose acidifies the gut and pulls ammonia out of the blood into stool. Rifaximin kills ammonia-making bacteria in the intestines. Together they lower brain ammonia and clear confusion.
- IV albumin 1–1.5 g/kg on day 1, then 1 g/kg on day 3 + midodrine and octreotide (or terlipressin where available) for hepatorenal syndrome → Albumin fills blood vessels with protein so kidneys get enough blood flow. Midodrine and octreotide (or terlipressin) squeeze blood vessels to push blood pressure up and wake the kidneys before they fail permanently.
- Spironolactone 100 mg daily + furosemide 40 mg daily (water pills) for fluid buildup in the belly (ascites), with low-salt diet (< 2 g sodium/day) → Water pills make the kidneys dump extra salt and water into urine, draining the belly and leg swelling. Low salt keeps fluid from building back up. This relieves breathing trouble and discomfort.
- Non-selective beta-blocker (propranolol or carvedilol, dose adjusted to lower heart rate ~25%) for primary or secondary prevention of variceal bleeding → Lowers pressure in the portal vein (the main vein feeding the liver) so varices shrink and are less likely to bleed. Prevents first bleed in people with large varices, and prevents re-bleeding after an episode.
- Liver transplant evaluation and listing → Replaces the dying liver with a healthy donor liver, which restores all liver functions and can cure cirrhosis complications if done before irreversible organ damage.

Medications

Octreotide · Somatostatin analog (a lab-made copy of a natural hormone that turns down certain body signals)

Octreotide squeezes the blood vessels going into the stomach and esophagus so less blood flows through them. This lowers the pressure inside the swollen veins (varices) in the food pipe, making them less likely to burst and bleed.

1. Octreotide mimics somatostatin, a natural hormone your body makes.
2. It tells the blood vessels in your gut to squeeze tighter (constrict).
3. Less blood flows through these vessels, so the pressure drops.
4. The swollen veins in your esophagus feel less pressure and are less likely to rupture.

SAFETY WATCH

Can slow your heart rate (bradycardia). · May cause belly cramps, nausea, or diarrhea. · Can raise or lower your blood sugar — check your sugar if you have diabetes. · Gallstones can form if you use it for a long time.

Ceftriaxone · Antibiotic (a germ-killing medicine)

Ceftriaxone kills bacteria that can slip into your bloodstream when you bleed from varices. When you have cirrhosis and bleed, bacteria from your gut can sneak through the gut wall or travel up from the belly fluid (ascites). This antibiotic stops those bacteria before they cause a serious infection (like spontaneous bacterial peritonitis or blood infection), which saves lives.

1. When varices bleed, the blood and stress let bacteria from your gut get into places they should not be.
2. Ceftriaxone enters your blood and belly fluid.
3. It punches holes in the bacteria's cell wall, killing them.
4. This prevents infections that commonly happen after variceal bleeding and improves survival.

SAFETY WATCH

Allergic reactions are possible, especially if you are allergic to penicillin (tell your doctor). · Can cause diarrhea, including C. diff infection if used for a long time. · Can form crystals in the gallbladder or kidneys (rare). · Do NOT mix with calcium-containing IV fluids in newborns.

Propranolol or Carvedilol (nonselective beta-blockers) · Beta-blocker (a medicine that slows the heart and relaxes blood vessels)

These beta-blockers lower the pressure in the portal vein (the big vein that carries blood from your gut to your liver). High pressure in this vein makes the varices swell and burst. By blocking certain signals (beta receptors) in your heart and blood vessels, these drugs slow your heart and widen the blood vessels in your gut, so less blood pushes into the varices.

1. The drug blocks beta receptors in your heart, making it beat slower and with less force.
2. It also blocks beta receptors in blood vessels, letting some vessels relax.
3. Less blood flows into the portal vein, so the pressure drops.
4. Lower pressure means the varices are under less strain and less likely to bleed.

SAFETY WATCH

Can make you feel tired or dizzy, especially when you stand up. · Can slow your heart too much (bradycardia) or drop your blood pressure. · Do NOT use if you have asthma or severe COPD — they can tighten airways. · Can mask low blood sugar symptoms in people with diabetes. · Your doctor will adjust the dose until your resting heart rate is around 55–60 beats per minute.

Lactulose · Osmotic laxative (a sugar that pulls water into your gut)

Lactulose traps ammonia (a toxic waste) in your colon and helps your body get rid of it in your stool. When your liver is scarred, it cannot clean ammonia from your blood. The ammonia builds up and travels to your brain, causing confusion (hepatic encephalopathy). Lactulose lowers the ammonia level by making you have soft, frequent bowel movements that carry the ammonia out.

1. You swallow lactulose, a type of sugar your body cannot digest.
2. It reaches your colon, where bacteria break it down into acids.
3. These acids pull water into your colon and trap ammonia as a charged particle (ammonium).
4. The trapped ammonia leaves your body in loose stools, so less reaches your brain.

SAFETY WATCH

Causes loose stools and gas — this is expected and means it is working. · Drink plenty of water to avoid dehydration from frequent bowel movements. · Cramps and bloating are common. · The dose is adjusted until you have 2–3 soft stools a day.

Rifaximin · Antibiotic (a germ-killing medicine that stays in your gut)

Rifaximin kills certain bacteria in your gut that make ammonia. It works alongside lactulose to lower ammonia levels even more. Unlike most antibiotics, rifaximin stays in your intestines and barely enters your bloodstream, so it targets gut bacteria without affecting the rest of your body much.

1. You swallow rifaximin.
2. It stays in your gut and kills bacteria that produce ammonia.
3. With fewer ammonia-making bacteria, less ammonia is made.
4. This helps keep your brain clear (prevents or treats hepatic encephalopathy).

SAFETY WATCH

Generally well tolerated with few side effects. · Can cause mild nausea or belly discomfort.
· Very rarely causes C. diff infection. · Safe to use long-term for prevention of encephalopathy.

Albumin (intravenous human albumin) · Plasma volume expander (a protein that helps keep fluid in your blood vessels)

Albumin is a protein normally made by your liver. When your liver is scarred, it makes less albumin. Low albumin lets fluid leak out of your blood vessels into your belly (ascites) and can make your kidneys struggle. Giving albumin through an IV pulls fluid back into your blood vessels, supports your blood pressure, and helps your kidneys work better. It is especially important when you have an infection (like spontaneous bacterial peritonitis) or kidney problems (hepatorenal syndrome).

1. Albumin is infused into your vein.
2. It stays in your blood vessels and pulls water toward it (osmotic effect).
3. This increases the volume of blood in your vessels and supports blood pressure.
4. Better blood flow helps your kidneys filter waste and make urine.
5. It also helps fight inflammation and supports your immune system during infections.

SAFETY WATCH

Can cause fluid overload if given too fast or in too much volume (watch for trouble breathing or swelling). · Allergic reactions are rare but possible. · Made from human blood donors, so very small infection risk (screened carefully). · Used in specific situations (SBP, large-volume paracentesis, hepatorenal syndrome) — not routine.

Terlipressin · Vasopressin analog (a synthetic hormone that tightens blood vessels)

Terlipressin squeezes blood vessels throughout your body, which raises blood pressure and improves blood flow to your kidneys. In hepatorenal syndrome (when your kidneys fail because of cirrhosis), the blood vessels in your gut are too relaxed and blood pools there, leaving your kidneys starved. Terlipressin redirects blood flow so your kidneys get enough to start working again.

1. Terlipressin is given through an IV.
2. It activates vasopressin receptors on blood vessel walls.
3. The vessels squeeze tight (constrict), especially in the gut.
4. Blood is pushed out of the gut and into the general circulation.
5. Your blood pressure rises and your kidneys receive more blood, so they can filter waste and make urine again.

SAFETY WATCH

Can cause belly cramps and diarrhea. · May slow your heart rate (bradycardia). · Can reduce blood flow to the heart, gut, or limbs if vessels squeeze too tight (ischemia). · Not available in the United States as of 2025; norepinephrine or midodrine plus octreotide are used instead. · Close monitoring in the ICU is needed.

Norepinephrine · Vasopressor (a medicine that squeezes blood vessels and raises blood pressure)

Norepinephrine tightens blood vessels and raises blood pressure. In hepatorenal syndrome, your blood pressure is too low and your kidneys shut down. Norepinephrine (often combined with albumin) squeezes the blood vessels, lifts your blood pressure, and pushes more blood to your kidneys so they can start filtering again.

1. Norepinephrine is given through an IV, usually in an ICU.
2. It activates alpha receptors on blood vessel walls, making them squeeze tight.
3. Blood pressure rises.
4. More blood flows to your kidneys, helping them recover function.
5. It works best when combined with IV albumin.

SAFETY WATCH

Requires a central IV line and ICU monitoring. · Can cause dangerous high blood pressure if the dose is too high. · May reduce blood flow to fingers, toes, or gut if vessels squeeze too tight (ischemia). · Can cause irregular heart rhythms. · Only used in the hospital under close watch.

Furosemide · Loop diuretic (a water pill that makes you urinate more)

Furosemide tells your kidneys to dump extra salt and water into your urine. In cirrhosis, fluid builds up in your belly (ascites) and legs (edema) because your body holds onto salt.

Furosemide helps you pee out that extra fluid, shrinking the swelling.

1. You swallow furosemide (or get it through an IV).
2. It travels to your kidneys and blocks a pump that reabsorbs salt (sodium and chloride).
3. Without reabsorption, the salt stays in the urine.
4. Water follows the salt, so you make more urine and lose fluid.

SAFETY WATCH

Can make you dizzy or lightheaded from low blood pressure. · Can cause low potassium (hypokalemia), which makes you weak and can cause dangerous heart rhythms. · Can worsen kidney function if you lose too much fluid. · May cause ringing in the ears (tinnitus) at high doses. · Usually given with spironolactone to balance electrolytes.

Spironolactone · Potassium-sparing diuretic and aldosterone antagonist (a water pill that keeps potassium while removing fluid)

Spironolactone blocks aldosterone, a hormone that tells your kidneys to hold onto salt and water. In cirrhosis, aldosterone levels are high, causing fluid to pile up in your belly and legs. Spironolactone stops that signal, so your kidneys release salt and water without losing potassium.

1. You swallow spironolactone.
2. It blocks aldosterone receptors in your kidneys.
3. Your kidneys stop reabsorbing sodium, so sodium leaves in your urine.
4. Water follows the sodium out, reducing fluid buildup in the belly (ascites) and swelling.
5. Your body keeps potassium, which furosemide tends to waste.

SAFETY WATCH

Can cause high potassium (hyperkalemia), which is dangerous for your heart — your doctor will check blood tests. · May cause breast tenderness or enlargement in men (gynecomastia). · Can make you dizzy from low blood pressure. · Takes a few days to start working — be patient. · Often combined with furosemide in a 100 mg spironolactone to 40 mg furosemide ratio.

Red flags

- Confusion, drowsiness, or not waking up easily (suggests toxins are affecting the brain)
- Vomiting blood or black, sticky stools like tar (life-threatening bleeding from swollen veins)
- Fever and belly pain with fluid buildup in the belly (ascites) (possible infection of the fluid in the belly)
- Making very little urine or none at all (kidneys may be failing)
- Trouble breathing or very fast breathing (fluid may be pressing on the lungs or infection is spreading)

Nursing priorities

1. Check blood pressure, heart rate, and oxygen level every 1 to 2 hours if the patient has bleeding signs; place two large-bore IVs and keep type-and-cross blood ready. — Variceal bleeding (bleeding from swollen throat veins) can cause the patient to lose a large amount of blood very fast, dropping blood pressure and causing shock (not enough blood flow to organs); two IVs allow rapid fluid and blood transfusion to keep organs alive until endoscopy stops the bleeding.
2. Monitor mental status every 2 to 4 hours using a simple test; ask the patient to write their name or draw a star, and report any new confusion, sleepiness, or strange behavior immediately. — Hepatic encephalopathy (brain toxins from liver failure) can go from mild confusion to coma in hours; catching it early allows lactulose and rifaximin to clear ammonia (a toxin) from the bowels before brain swelling or coma happens.
3. Measure and record urine output every hour; notify the provider if urine is less than 30 milliliters per hour or if urine becomes very dark. — Low urine output means the kidneys are shutting down from hepatorenal syndrome (kidney failure caused by the sick liver) or dehydration; catching it early allows IV albumin and fluid adjustment to protect kidney function and prevent the need for dialysis.

4. Give lactulose on time and track the number and consistency of bowel movements; adjust the dose to get 2 to 3 soft stools per day. — Lactulose pulls ammonia and other toxins out of the blood and into the stool; regular bowel movements lower ammonia levels and prevent hepatic encephalopathy from worsening, protecting the brain from damage.
5. Measure belly size at the belly button each day and weigh the patient every morning; report weight gain of more than 2 pounds in one day or trouble breathing. — Growing belly size and fast weight gain mean fluid buildup in the belly (ascites) (belly fluid) is getting worse, which can press on the lungs and make breathing hard; tracking these signs helps the team adjust diuretics like spironolactone (a water pill) or plan paracentesis (draining fluid with a needle) to relieve pressure.
6. Check for fever every 4 hours and assess for new belly pain or tenderness, especially in patients with fluid buildup in the belly (ascites); report fever above 100.4 degrees Fahrenheit or worsening belly pain right away. — Fever and belly pain in a patient with fluid buildup in the belly (ascites) strongly suggest spontaneous bacterial peritonitis or SBP (infected belly fluid), which can cause sepsis and death in 24 hours; early IV antibiotics like ceftriaxone and paracentesis (testing the fluid) save lives.
7. Inspect skin and gums for new bruises, bleeding, or yellow color; check all IV sites and apply pressure for at least 5 minutes after needle sticks. — The cirrhotic liver does not make clotting factors (proteins that stop bleeding), so patients bleed easily and for a long time; prolonged pressure prevents dangerous bleeding from small procedures, and yellow skin (jaundice from bilirubin buildup) shows the liver is failing more.
8. Give IV albumin exactly as ordered after large-volume paracentesis or for kidney protection; hang albumin slowly over 2 to 4 hours and watch for fluid overload signs like fast breathing or leg swelling. — Removing a lot of fluid buildup in the belly (ascites) fluid (more than 5 liters) drops blood pressure suddenly because fluid shifts inside the body; albumin keeps blood volume stable and protects the kidneys from hepatorenal syndrome (kidney shutdown), but too much too fast can overload the heart and lungs.

Sources

- AASLD (American Association for the Study of Liver Diseases) Practice Guidance on Decompensated Cirrhosis 2021
- Hepatology journal consensus guidelines
- EASL (European Association for the Study of the Liver) Clinical Practice Guidelines

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