

Hepatic Artery Infusion Pump (HAI Pump)

An HAI pump is a small, implanted device (about the size of a hockey puck). It is used to infuse chemotherapy directly into your liver.

How it Works

A surgeon will place the pump under your skin during surgery. A tube is then stitched into a blood vessel (the hepatic artery) to help send the medicine into your liver. Since the medicine is going right into your liver, it can be given at a higher dose while avoiding more side effects.

Candidates for HAI Pump

An HAI pump may work for you if you have:

- Colorectal cancer that has spread to the liver.
- Bile duct cancer in the liver (cholangiocarcinoma).

Risks

Your surgeon will explain the pros and risks of the HAI pump surgery. There are both short-term and long-term risks. These risks include:

- Complications from surgery
- Infection, including pump pocket infection
- Catheter dislodgement
- Bleeding around the catheter tip
- Injury to the liver or bile duct
- Liver damage
- Blood clots
- Air in the pump

Infusion Process

The pump can hold 30mL (cc) of liquid. Every 2 weeks your nurse will need to refill your pump. They will first access your pump with a needle and remove any medicine that

remains in your pump. It is then refilled with more medicine. **You must get your pump refilled regularly. If the pump runs out of medicine, it may stop working.**

Your HAI pump could be filled with either:

- Floxuridine (FUDR)
- A mixture of heparin and saline
- Glycerol

On Treatment

Every refill on treatment will switch between FUDR and heparin/saline. We try to give you this 4 to 6 times over 4 to 6 months. FUDR can't be given for longer than 6 months except in rare cases. Your oncologist will go over your care plan. Some patients receive medicine through their central venous catheter or peripheral IV.

Off Treatment

Your pump will stay in even after you have finished chemotherapy (off treatment). It can be used in the future if needed. While off treatment, your pump will be infused with glycerol every 6-8 weeks or heparin and saline every 2 weeks. This helps to keep your pump working. You and the clinic will decide when to remove the pump. Once the pump is removed, it will not be an option to use in the future.

Labs

You will have blood drawn every 2 weeks while on treatment. You can do this on the days your pump is refilled.

Pump Placement Surgery

The surgeon will make an incision (cut) through the middle of your abdomen. This is to access the hepatic artery. A pocket is created under the skin for the pump to the left or right of the incision. Heparin and saline will be placed in your pump. Your gallbladder will also be removed to help prevent problems. This surgery takes about 2 to 3 hours. It could be longer if a colorectal tumor is removed.

Hospital Stay

You should plan to stay in the hospital for 3 to 5 days. This can be longer or shorter. You will likely have a longer stay if part of your colon was removed during surgery.

Perfusion Study

You will have a perfusion study while in the hospital to make sure the pump is working well. Our nuclear medicine department will conduct this. This study is done 1 or 2 days after surgery.

Care Team

You will have many people caring for you in the hospital, such as:

- Your surgeon
- Resident physicians
- Physician assistants or nurse practitioners
- Nursing assistants
- Nurses
- Case manager

After Surgery

Pain

Your belly and incision may be sore and swollen. This should improve over 1 to 4 weeks. You will see or feel the shape of the pump under your skin. With time, you may not feel the pump as much.

Work

You may need to take at least 2 to 6 weeks off work.

Clothing

You may prefer to wear loose clothing over the pump.

Sleeping

You may find it hard to sleep on the side with the pump. This should improve with time. **Talk to your team if you're having a hard time sleeping.**

Restrictions

After surgery, you should **avoid**:

- Lifting more than 10 pounds for 6 weeks after surgery.
- Things that can increase your body temperature such as:
 - Hot tubs
 - Saunas
 - Steam rooms
 - Tanning beds
 - Sitting in the sun for long periods of time
 - Hot yoga
 - Other things that may raise your body temperature
- Heating pads on your stomach unless your doctor approves.
- Swimming, snorkeling, and tub baths until your incision is fully healed.
- Hard physical activity such as contact sports.
- Anything that increases or decreases pressures such as scuba diving or flying in unpressurized airplanes (large commercial airlines should be okay).

Imaging such as an MRI may temporarily affect the flow rate of your pump. This will be considered by your care team when scheduling scans.

When to Call

Call your doctor if cannot make your scheduled visit or if you have:

- Redness, firmness, or drainage from your incision site
- Any chills or fever over 100.5° F
- Nausea or vomiting that doesn't go away
- Yellowing of the eyes or skin
- Darkened urine
- Clay-colored stools
- Pain that prevents you from doing your normal daily tasks.

Who to Call

Call the **UW Surgery Clinic** if you have any questions or concerns about your surgery or the pump. Ask to speak to the surgical oncologist on call during non-clinic hours.

UW Surgery Clinic
608-263-7502

Call the **UW Health Oncology Clinic** if you have any questions or concerns about your chemotherapy. You can call to schedule refill visits.

UW Health Oncology Clinic
608-915-0100

Your health care team may have given you this information as part of your care. If so, please use it and call if you have any questions. If this information was not given to you as part of your care, please check with your doctor. This is not medical advice. This is not to be used for diagnosis or treatment of any medical condition. Because each person's health needs are different, you should talk with your doctor or others on your health care team when using this information. If you have an emergency, please call 911. Copyright © 6/2024 University of Wisconsin Hospitals and Clinics Authority. All rights reserved. Produced by the Department of Nursing. HF#8354