Esophageal Cancer: Photodynamic Therapy (PDT)

What is photodynamic therapy?

Photodynamic therapy (PDT) is a type of cancer treatment. A light-activated medicine is put into your blood and travels all over your body. It tends to collect in cancer cells. Later these cells are exposed to a special kind of light. This changes the medicine into a new form that kills the cancer cells.

Why might I need photodynamic therapy?

PDT relies on light to work. So it can only be used for cancers that are near the inner surface of your esophagus. It can't reach deeper layers of the esophagus or cancer in other parts of your body. PDT might be a choice to treat esophageal cancer if:

- You have Barrett esophagus and a biopsy has shown abnormal cells called dysplasia. PDT can kill these damaged cells so they can't become cancer over time.
- The cancer has been found in its very early stages. This means it's small and only in the lining of your esophagus. In this case, PDT might be the only treatment needed. It may cure the cancer if it hasn't spread into deeper tissues or beyond your esophagus.
- The cancer is considered advanced (it's large or has spread), and the tumor is making it hard to swallow. PDT is used as palliative treatment. This means it eases symptoms but doesn't cure the cancer. It can shrink the tumor and make it easier for you to swallow.

How is photodynamic therapy given?

In most cases, PDT is an outpatient procedure. This means you don't have to stay in the hospital for treatment. A trained healthcare provider injects a light-activated medicine called porfimer sodium into a vein in your hand or arm. You'll be sent home for 24 to 72 hours while your cells absorb the medicine. The medicine will leave most of your normal cells during this time. But it will stay longer in cancer cells and your skin cells.

Then you'll go back to the clinic or hospital for the next phase of treatment. You may get local numbing medicine (anesthesia). Or you may get general anesthesia, which will make you fall asleep and not feel pain. A healthcare provider will then pass a thin, flexible lighted tube (endoscope) down your throat and into your esophagus. This tube lets the provider see inside your esophagus. The light is put in through the endoscope. This special laser light is aimed right at the tumor for a few minutes. When the light hits the tumor, the medicine absorbs the light. It makes a form of oxygen that kills cancer cells. You can normally go home a few hours after you wake up.

You may need to have a clean-up endoscopy several days after PDT. This is done to take out the dead cells. You may also need to have PDT done again to kill more cells.

What are the possible side effects of photodynamic therapy?

After you get the medicine, your skin and eyes will be very sensitive to sunlight. It also increases your risk for dangerous sunburns. You'll need to protect your skin and eyes right away and for at least 4 to 6 weeks after treatment. Your healthcare provider will tell you more about how to do this. But here's what you can expect:

- On the day of your injection, close your shades and curtains at home before you leave.
- Bring clothes that cover your skin with you when you get the injection. Wear them afterwards. These include:
    - Hat
    - Dark sunglasses

    - Light-colored, long-sleeved shirt made of tightly woven fabric
    - Light-colored long pants made of tightly woven fabric
    - Socks
    - Gloves
- Wear the protective clothing listed above any time you go outside. You should even wear it on cloudy days. Don't expose your skin to sunlight for at least a month after treatment.
- Don’t go outside during peak sunlight hours, from 10 a.m. to 4 p.m. Limit how often you’re in the sun at other times, even on cloudy days.
- Sunscreen alone does not work well enough to protect your skin during this time. Wear protective clothes.

After about 4 weeks, your healthcare provider may have you expose a small amount of skin on your hand to sunlight for 10 minutes. If you have swelling, redness, or blistering within the next 24 hours, continue to protect your skin and eyes from light for another 2 weeks. If you don't have a reaction, you may slowly increase your exposure to sunlight.

The activating light is focused on the tumor. This means the damage to nearby healthy tissue is normally limited. But you may have burns, swelling, pain, or scarring in nearby healthy tissues, including your windpipe. You may also have these short-term side effects after PDT:

- Coughing up blood or mucus
- Trouble swallowing
- Stomach pain
- Painful breathing
- Shortness of breath

Talk with your healthcare provider about how to ease these side effects. Ask which side effects are serious so you know when to call your healthcare provider. Know what number to call after office hours and on weekends.