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Hand-Foot Syndrome or Palmar-Plantar Erythrodysesthesia [1]

This section has been reviewed and approved by the Cancer.Net Editorial Board [2], 02/2014

Hand-foot syndrome, also called palmar-plantar erythrodysesthesia, is a side effect of some types of chemotherapy. Hand-foot syndrome causes redness, swelling, and pain on the palms of the hands and/or the soles of the feet. Sometimes blisters appear. Although less common, hand-foot syndrome sometimes occurs on other areas of the skin, such as the knees and the elbows.

Relieving side effects, also called symptom management, palliative care [3], or supportive care, is an important part of cancer care and treatment. Talk with your health care team about any symptoms you experience, including new symptoms or a change in symptoms.

Symptoms

In mild to moderate hand-foot syndrome, the following symptoms may occur on the palms of the hands and/or the soles of the feet:

- Redness (similar to a sunburn)
- Swelling
- A sensation of tingling or burning
- Tenderness (sensitive to touch)
- Tightness of the skin
- Thick calluses and blisters on the palms and soles

Symptoms of severe hand-foot syndrome include:

- Cracked, flaking, or peeling skin
- Blisters, ulcers, or sores on the skin
- Severe pain
- Difficulty walking or using the hands

Causes

Hand-foot syndrome occurs when drugs used to treat the cancer affect the growth of skin cells or capillaries (small blood vessels) in the hands and feet. Once the drug is out of the blood vessels,

it damages the surrounding tissues. This can cause symptoms of hand-foot syndrome that range from redness and swelling to difficulty when walking.

Some therapies are more likely to cause hand-foot syndrome than others. The drugs that may cause hand-foot syndrome include:

- Axitinib (Inlyta)
- Cabozantinib (Cometriq)
- Capecitabine (Xeloda)
- Cytarabine (Cytosar-U)
- Docetaxel (Docefrez, Taxotere)
- Floxuridine (FUDF)
- Fluorouracil (5-FU, Adrucil)
- Idarubicin (Idamycin)
- Liposomal doxorubicin (Doxil)
- Doxorubicin (Adriamycin)
- Sunitinib (Sutent)
- Sorafenib (Nexavar)
- Pazopanib (Votrient)
- Paclitaxel (Taxol)
- Vemurafenib (Zelboraf)
- Regorafenib (Stivarga)

Not everyone who is treated with these medications develops hand-food syndrome. The severity of hand-foot syndrome can vary from person to person, even among people taking the same medication for the same form of cancer.

Management and prevention

Hand-foot syndrome is usually worse during the first six weeks of treatment with targeted therapies [4], such as axitinib, cabozantinib, regorafenib, sorafenib, sunitinib, and pazopanib. With chemotherapies, it usually appears after two to three months. If you have symptoms of hand-foot syndrome, talk with your doctor or another member of your health care team. There are ways to manage symptoms of hand-foot syndrome and prevent it from worsening. The following tips may help:

- Limit exposure of hands and feet to hot water when washing dishes or bathing.
- Take cool showers or baths. Carefully pat your skin dry after washing or bathing.
- Cool your hands and feet with ice packs or cool running water or compresses (such as a wet towel) for 15 to 20 minutes at a time. (Avoid applying ice directly to the skin.)
- Avoid exposure to sources of heat, including saunas, sitting in the sun, or sitting in front of a sunny window.
- Avoid activities that cause unnecessary force or friction (rubbing) on the hands or feet during the first six weeks of treatment, such as jogging, aerobics, and racquet sports.
- Avoid contact with harsh chemicals used in laundry detergents or household cleaning products.
- Avoid the use of rubber/vinyl gloves without a liner to clean with hot water, as rubber traps heat and sweat against your skin. A good practice is to use white cotton gloves underneath

rubber/vinyl gloves.
- Avoid using tools or household items that require you to press your hand against a hard surface, such as garden tools, knives, and screwdrivers.
- Gently apply skin care creams to keep your hands moist. Avoid rubbing or massaging lotion into your hands and feet; this can cause creates friction.
- Wear loose fitting, well-ventilated (air moves through easily) shoes and clothes.
- Try not to walk barefoot and use soft slippers and thick socks to reduce friction in your feet.
- Consider visiting a podiatrist (a doctor who specializes in conditions of the feet) to remove any thick calluses and thick nails. He or she can also recommend products that reduce friction and pressure on the feet.

Treatment

When taking medications known to cause hand-foot syndrome, topical anti-inflammatory medications may help. These include corticosteroid creams such as clobetasol (multiple brand names) or halobetasol (Ultravate). In addition, your doctor may reduce your chemotherapy dose or alter your chemotherapy schedule. If necessary, your doctor may temporarily stop your chemotherapy until symptoms of hand-foot syndrome improve.

The following medications may also be used to treat hand-foot syndrome:

- Topical anesthetics, such as lidocaine (Lidothesin, Lidoderm, Xylocaine, Xylocitin), used as a cream or a patch over painful areas in the palms and soles.
- Topical moisturizing exfoliant creams are available, either over the counter or through your doctor, such as those containing urea, salicylic acid, or ammonium lactate
- Pain relievers, such as ibuprofen (multiple brand names), naproxen (multiple brand names), and celecoxib (Celebrex)
- Ice packs under the hands and feet during the infusion of certain chemotherapies (paclitaxel, docetaxel, doxorubicin) to prevent hand-foot syndrome.

More Information

Skin Conditions [5]

Side Effects of Chemotherapy [6]

Side Effects [7]

Links:
[1] http://www.cancer.net/navigating-cancer-care/side-effects/hand-foot-syndrome-or-palmar-plantar-erythrodysesthesia
[2] http://www.cancer.net/about-us
[3] http://www.cancer.net/node/25282
[4] http://www.cancer.net/node/30686
[5] http://www.cancer.net/node/25260
[6] http://www.cancer.net/node/24676
[7] http://www.cancer.net/node/25238