PHARMCON

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Overview of Poison Ivy Prevention and Treatment

0.25 HOUR CE

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As a Scoutmaster in Central Pennsylvania, I would always look for poison ivy on our hikes. Now that I live in Northern West Virginia, poison ivy is EVERYWHERE. It quickly grows in our gardens, flowerbeds and along any hedgerows. A lot of patients get exposed to this nasty weed, and we frequently get consultations for poison ivy rash.

Diphenhydramine and other antihistamines, which we frequently recommend for hives and wheals, have NO PLACE in poison ivy therapy. The poison ivy reaction is due to T-cell mediation causing a delayed hypersensitivity reaction, and not due to histamine. Topical antihistamines are even more worthless. Domeboro or referral to a doctor is my only recommendation.

Now for the good news from the Anacardiaceae family: This family also includes cashews, pistachios and mangos!

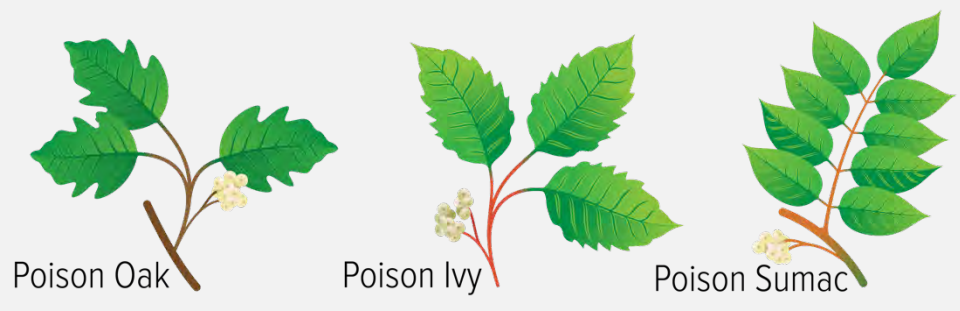
Poison Ivy: The Basics

The Toxicodendron ("means poisonous tree") genus of plants causes more contact dermatitis than all other causes combined. 10-50 million Americans develop allergic contact dermatitis due to a Toxicodendron annually. In one study, 10% of all occupational injuries among seasonal farm, workers in PA and NY were due to poison ivy contact. The genus/species names are as follows:

- Common or northern poison ivy (*Toxicodendron radicans*)
- Western poison ivy (*Toxicodendron rydbergii*)
- Eastern poison oak (*Toxicodendron toxicarium*)
- Western poison oak (*Toxicodendron diversilobum*)
- Poison sumac (*Toxicodendron vernix*)

Regardless of the species, the treatment protocols for poison ivy (Toxicodendron) exposure remain consistent. Allergic contact dermatitis (ACD) associated with poison ivy has two distinct phases, with approximately 85% of individuals experiencing a reaction to the plant. The first phase involves sensitization, during which a specific hypersensitivity to the allergen is acquired. Subsequently, in the elicitation phase, a visible dermatological response occurs.

Figure 1. Members of the Toxicodendron Genus.



Identification of Poison Ivy

Poison ivy is typically recognized as a hairy, ropelike vine featuring three shiny green (or red in the fall) leaves budding from one small stem. A common saying to identify it is, "Leaves of three, let them be!" and "Hairy vine, no friend of mine." It may produce yellow or green flowers and white to green-yellow or amber berries. Poison sumac, on the other hand, can be more challenging to identify, often forming leaflets of five, seven, or more that angle upward toward the top of the stem. It presents as a woody shrub with stems containing 7-13 leaves arranged in pairs (**Figure 1**).

What Happens

Urushiol, an oleoresin or lacquer, oozes from broken leaves and stems, leading to the characteristic black dots, which are oxidized urushiol due to the enzyme laccase present in the oleoresin. The transmission of urushiol can occur through direct contact with the plant or indirectly from items like pets, tools, gloves, shoes, and clothing.
Decontaminating fabrics can be achieved by washing clothes in regular laundry detergent. Notably, burning poison ivy should never be attempted as it vaporizes the oil, posing a risk of lung damage. It's important to understand that the wheals and blisters of poison ivy contain serum, not urushiol. While poison ivy rashes and those from other poison plants cannot spread from person to person, one can acquire the rash from plant oil that adheres to clothing, pets, garden tools, and other items in contact with these plants.

When Contact Occurs

When a patient is exposed to a poisonous plant, such as poison ivy, oak, or sumac, immediate action is crucial:

- Rinse the skin promptly with rubbing alcohol, poison plant wash, or degreasing soap (like dishwashing soap) or detergent, using plenty of water. Professor Pete employs a half bar of Fels Naphtha soap (old-fashioned washboard soap) enclosed in a nylon stocking, a convenient and never-soggy solution he carries backpacking or ties to his canoe seat.
- Rinse the affected area frequently to prevent the wash solutions from drying on the skin, potentially spreading the urushiol.
- Thoroughly scrub under the nails with a brush.
- Launder exposed clothing separately in hot water with detergent.
- Clean tools after use with rubbing alcohol or soap and abundant water. It's essential to note that urushiol can remain active on object surfaces for up to 5 years, and disposable gloves should be worn during this process.

Treatment of Poison Ivy

Prescriber Referral

Seeking medical attention is crucial in specific scenarios related to poison ivy exposure. It is advised when the contamination affects over 25% of the body surface area or if there are signs of infection. Additionally, medical intervention is warranted for limited but disabling involvement, especially in sensitive areas like the hands, face, around the mouth or

eyes, or genital regions. Patients with a history of severe reactions should also seek prompt medical care to ensure appropriate management and prevent potential complications.

Poison Ivy Treatment

Extended treatment duration is essential when dealing with poison ivy exposure. Pharmacists often patients return a few days after completing a methylprednisolone dosepak, experiencing what they believe to be a new bout of poison ivy. In reality, these are rebound symptoms from the original case, highlighting the inadequacy of a six-day treatment pack. For effective oral prednisone therapy, a dosage of 0.5 to 2 mg/kg/day tapered over a 14- to 21-day period is recommended, typically starting at 60 mg per day and gradually tapering down. This extended regimen reduces the likelihood of rebound dermatitis.

Topical treatments like oatmeal baths and calamine may offer some relief but are generally of limited value. Hydrocortisone 1% over-the-counter is only useful in mild cases. It's crucial to avoid topical antihistamines, anesthetics, antibiotics, and poison ivy extracts. Burow's solution, available over-the-counter, can be applied as a wet dressing to alleviate itching. Topical prescription corticosteroids are most effective in the early stages before blisters form. Notably, oral antihistamines are ineffective against urushiol reactions, as the response is a contact dermatitis rather than an allergic reaction mediated by histamine.

Have a great day on the bench!!

References

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2. *Guin JD. The black spot test for recognizing poison ivy and related species.* J Am Acad Dermatol. *1980;2(4):332-333. doi:10.1016/s0190-9622(80)80047-8*
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Test Questions Pharmacist, Pharmacy Technician

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1. How long should the duration of treatment be for poison ivy?

a. 10 days
b. 5 days
c. 14 days
d. 30 days

2. What is the preferred treatment for poison ivy?

a. Oral antihistamines
b. Topical antihistamines
c. Oral corticosteroids
d. Oatmeal baths

PHARMACIST LEARNING OBJECTIVES

1. Identify treatment of poison ivy

PHARMACY TECHNICIAN LEARNING OBJECTIVES

1. Identify treatment of poison ivy

OVERVIEW

Micro-learning opportunities were created in response to evidence that learning is maximized when delivered in short and focused 'bursts.' In this session, preventative and treatment strategies for poison ivy are examined.

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Pharmacist, Pharmacy Technician

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