



كلية معتمدة من الهيئة القومية لضمان
جودة التعليم والإعتماد بالجامعة
د.م (102) بتاريخ 27/9/2011

كلية الصيدلة



DRUG INFORMATION CENTER BULLETIN
FACULTY OF PHARMACY
ASSIUT UNIVERSITY

Ass. Uni. D.I. Bull., Vol.15, No.4, Dec. 2019

F-750-30-07



جامعة أسيوط

[In This Issue...]

- ▶ Plantar Fasciosis & Bone Spurs
- ▶ New FDA Approvals

Alternative Medicines Corner
Glutamine may be an option for
postinfectious IBS4

Test Your Knowledge6

DIC Real Enquiry6

CAM: Pomegranate7

NEW! Crossword Challenge8

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رقم الايداع: 12632 لسنة 2005

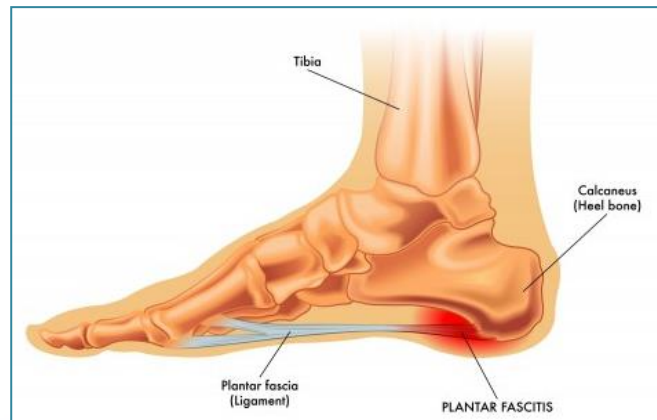
This Bulletin is a free quarterly periodical issued by the Drug Information Center (DIC)
located at Faculty of Pharmacy
Assiut University

Plantar Fasciosis & Bone Spurs

Plantar fasciosis is the most common cause of pain on the bottom of the heel. Approximately 2 million patients are treated for this condition every year.

Plantar fasciosis is pain at the site of the attachment of the plantar fascia and the calcaneus (calcaneal enthesopathy), with or without accompanying pain along the medial band of the plantar fascia.

Syndromes of pain in the plantar fascia have been called plantar fasciitis; however, because there is usually no inflammation, plantar fasciosis is more correct. Other terms used include calcaneal enthesopathy pain or calcaneal spur syndrome; however, there may be no bone spurs on the calcaneus. Plantar fasciosis may involve acute or chronic stretching, tearing, and degeneration of the fascia at its attachment site.



Etiology

The plantar fascia is designed to absorb the high stresses and strains we place on our feet. But, sometimes, too much pressure damages or tears the tissues. The body's natural response to injury is inflammation, which results in the heel pain and stiffness of plantar fasciosis.

Risk Factors

Recognized causes of plantar fasciosis include shortening or contracture of the calf muscles and plantar fascia. *Risk factors* for such shortening include a sedentary lifestyle, occupations requiring sitting, very high or low arches in the feet, and chronic wearing of high-heel shoes. The disorder is also common among runners and dancers and may occur in people whose occupations involve standing or walking on hard surfaces for prolonged periods.

Disorders that may be associated with plantar fasciosis are obesity, rheumatoid arthritis, reactive arthritis, and psoriatic arthritis.

HEEL SPURS

Although many people with plantar fasciosis have heel spurs, spurs are not the cause of plantar fasciosis pain. One out of 10 people has heel spurs, but only 1 out of 20 people (5%) with heel spurs has foot pain. Because the spur is not the cause of plantar fasciosis, the pain can be treated without removing the spur.

Heel spurs occur when calcium deposits build up on the underside of the heel bone, a process that usually occurs over a period of many months. Heel spurs are often caused by strains on foot muscles and ligaments, stretching of the plantar fascia, and repeated tearing of the membrane that covers the heel bone. Heel spurs are especially common among athletes whose activities include large amounts of running and jumping.

Symptoms

The most common symptoms of plantar fasciosis include:

- Pain on the bottom of the foot near the heel.
- Pain with the first few steps after getting out of bed in the morning, or after a long period of rest, such as after a long car ride. The pain subsides after a few minutes of walking.
- Greater pain after (not during) exercise or activity.

Diagnosis

Plantar fasciosis is confirmed if firm thumb pressure applied to the calcaneus when the foot is dorsiflexed elicits pain. Fascial pain along the plantar medial border of the fascia may also be present. The pain improves when toes are pointed down while there is limited "up" motion of the ankle.

If findings are equivocal, demonstration of a heel spur on x-ray may support the diagnosis; however, absence does not rule out the diagnosis, and visible spurs are not generally the cause of plantar fasciosis symptoms. Also, infrequently, calcaneal spurs appear ill defined on x-ray, exhibiting fluffy new bone formation, suggesting spondyloarthropathy (eg, ankylosing spondylitis, reactive arthritis). If an acute fascial tear is suspected or heel pain is not relieved by initial treatment methods, MRI is done.

Treatment

Nonsurgical Treatment

More than 90% of patients will improve within 10 months of starting simple treatment methods.

Rest. Decreasing or even stopping the activities that make the pain worse is the first step in reducing the pain. Athletic activities where feet pound on hard surfaces (for example, running or step aerobics) might need to be stopped.

Ice. Rolling the foot over a cold water bottle or ice for 20 minutes 3 to 4 times a day is effective.

Nonsteroidal anti-inflammatory medication. Drugs such as ibuprofen or naproxen reduce pain and inflammation. However, long term use for more than 1 month should be reviewed.

Exercise. Stretching the calves and plantar fascia is the most effective way to relieve the pain that comes with this condition.

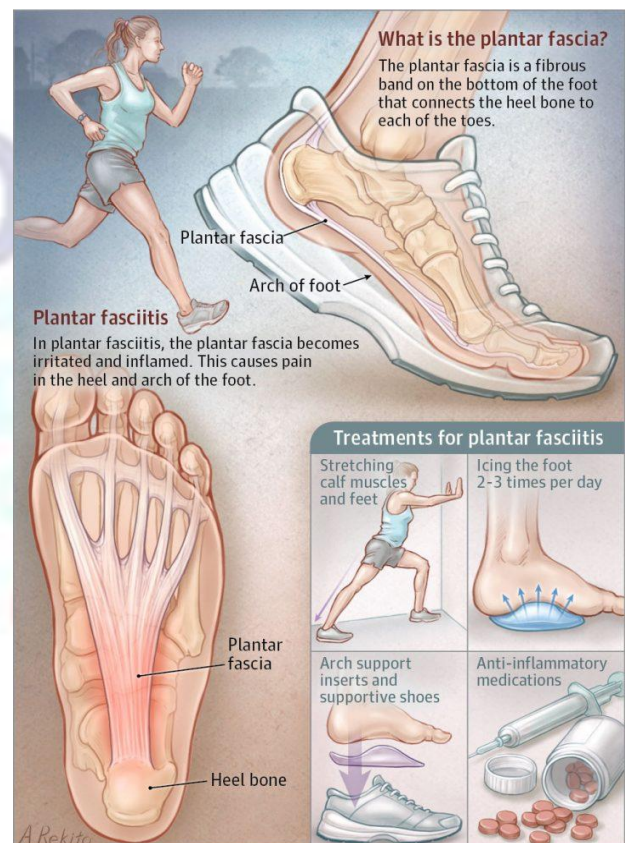
• Calf stretch

Lean forward against a wall with one knee straight and the heel on the ground. Place the other leg in front, with the knee bent. To stretch the calf muscles and the heel cord, push your hips toward the wall in a controlled fashion. Hold the position for 10 seconds and relax. Repeat this exercise 20 times for each foot. A strong pull in the calf should be felt during the stretch.

• Plantar fascia stretch

This stretch is performed in the seated position. Cross your affected foot over the knee of your other leg. Grasp the toes of your painful foot and slowly pull them toward you in a controlled fashion. If it is difficult to reach your foot, wrap a towel around your big toe to help pull your toes toward you. Place your other hand along the plantar fascia. The fascia should feel like a tight band along the bottom of your foot when stretched. Hold the stretch for 10 seconds. Repeat it 20 times for each foot. This exercise is best done in the morning before standing or walking.

Cortisone injections. Can be injected into the plantar fascia to reduce inflammation and pain. Multiple injections of corticosteroids may contribute by causing degenerative changes of the fascia and possible loss of the cushioning subcalcaneal fat pad.



Supportive shoes and orthotics. Shoes with thick soles and extra cushioning can reduce pain with standing and walking. A cushioned shoe or insert reduces this tension and the microtrauma that occurs with every step. Soft silicone heel pads are inexpensive and work by elevating and cushioning the heel. Pre-made or custom orthotics are also helpful.

Night splints. Most people sleep with their feet pointed down. This relaxes the plantar fascia and is one of the reasons for morning heel pain. A night splint stretches the plantar fascia while sleeping. Although it can be difficult to sleep with, a night splint is very effective and does not have to be used once the pain is gone.

Extracorporeal shockwave therapy (ESWT). During this procedure, high-energy shockwave impulses stimulate the healing process in damaged plantar fascia tissue. ESWT has not shown consistent results and, therefore, is not commonly performed.

ESWT is noninvasive—it does not require a surgical incision. Because of the minimal risk involved, ESWT is sometimes tried before surgery is considered.

Surgical Treatment

Surgery is considered *only* after 12 months of aggressive nonsurgical treatment.

Gastrocnemius recession. This is a surgical lengthening of the calf (gastrocnemius) muscles. Because tight calf muscles place increased stress on the plantar fascia, this procedure is useful for patients who still have difficulty flexing their feet, despite a year of calf stretches. The procedure can be performed with a traditional, open incision or endoscopically. Complication rates for gastrocnemius recession are low, but can include nerve damage.

Plantar fascia release. This procedure may be recommended if there is a normal range of ankle motion and continued heel pain. During surgery, the plantar fascia ligament is partially cut to relieve tension in the tissue. If there is a large bone spur, it will be removed, as well. Although the surgery can be performed endoscopically, it is more difficult than with an open incision. In addition, endoscopy has a higher risk of nerve damage.

References:

- 1) Whitney K A. *Plantar Fasciosis*. [Internet]; April 2018 [cited Nov 13, 2019]. Available from: <https://www.msdmanuals.com/professional/musculoskeletal-and-connective-tissue-disorders/foot-and-ankle-disorders/plantar-fasciosis>
- 2) Kadakia A. *Plantar Fasciitis and Bone Spurs*. [Internet]; June 2010 [cited Nov 13, 2019]. Available from: [https://www.urologyhealth.org/urologic-conditions/benign-prostatic-hyperplasia-\(bph\)](https://www.urologyhealth.org/urologic-conditions/benign-prostatic-hyperplasia-(bph))
- 3) WebMD. *Heel Spurs and Plantar Fasciitis*. [Internet]; February 4, 2018 [Nov 13, 2019]. Available from: <https://www.webmd.com/pain-management/heel-spurs-pain-causes-symptoms-treatments#1>



Alternative Medicines Corner

Glutamine may be an option for postinfectious IBS

Use of oral glutamine supplementation in patients with postinfectious diarrhea-predominant irritable bowel syndrome (IBS-D) dramatically and safely reduced all major IBS-related endpoints including gastrointestinal symptoms and changes in daily bowel movement frequency, stool form, and intestinal permeability compared with placebo, according to results of a small study published in *Gut*.

Source: Zhou Q, Verne ML, Fields JZ, et al. Randomised placebo-controlled trial of dietary glutamine supplements for postinfectious irritable bowel syndrome *Gut* 2019;68:996-1002.

FDA New Approvals

Reblozyl (luspatercept-aamt)

Reblozyl (luspatercept-aamt) is a first-in-class erythroid maturation agent (EMA) for the treatment of transfusion-dependent beta-thalassemia-associated anemia.

- Beta thalassemia is a rare, inherited blood disorder caused by a genetic defect in hemoglobin. **Reblozyl** works by regulating late-stage red blood cell maturation to help patients reduce their red blood cell (RBC) transfusion burden.
- The approval of **Reblozyl** was based on the results of the Phase 3, randomized, double-blind, placebo-controlled BELIEVE trial of 336 patients with beta thalassemia who required RBC transfusions. Of the 224 patients who received Reblozyl, 21.4% achieved at least a 33% reduction in transfusions compared to 4.5% of the patients who received a placebo.
- Reblozyl is administered via subcutaneous injection once every 3 weeks.
- Patients taking **Reblozyl** should be monitored for thromboembolic events and hypertension, and females of reproductive potential should use effective contraception. Common side effects include headache, bone pain, arthralgia, fatigue, cough, abdominal pain, diarrhea and dizziness.

Fetroja™ (cefiderocol)

Fetroja (cefiderocol) is a siderophore cephalosporin indicated for the treatment of complicated urinary tract infections (cUTI) in patients with limited or no alternative treatment options.

- **Cefiderocol** is a novel antibiotic that works by acting like a Trojan horse. The drug acts as a siderophore, binding to ferric iron to penetrate the outer cell membrane of Gram-negative pathogens taking advantage of the bacteria's need for iron to survive.
- The safety and efficacy of **Fetroja** was demonstrated in the APEKS-cUTI randomized study of 448 adults hospitalized with cUTI. Of the patients who received **Fetroja**, 72.6% had resolution of symptoms and eradication of the bacteria approximately seven days after completing treatment, compared with 54.6% in the patients who received imipenem/cilastatin. Clinical response rates between the two treatment groups were similar.
- **Fetroja** is administered every 8 hours via intravenous (IV) infusion.
- Patients receiving **Fetroja** should be aware of the possibility of serious allergic reactions, potentially serious diarrhea (Clostridium difficile-Associated Diarrhea), and central nervous system (CNS) adverse reactions including seizures.
- Common adverse reactions include diarrhea, infusion site reactions, constipation, rash, candidiasis, cough, elevations in liver tests, headache, hypokalemia, nausea, and vomiting.

Exservan (riluzole)

Exservan an oral film formulation of the approved glutamate Inhibitor riluzole for the treatment of patients with amyotrophic lateral sclerosis (ALS) patients who have difficulty swallowing.

- **Exservan** oral film is applied to the top of the tongue where it adheres and dissolves without the need for water. It's administered twice daily, at least 1 hour before or 2 hours after a meal.
- **Exservan** is the third **riluzole** formulation to be approved by the FDA after Rilutek (oral tablet) and Tiglutik (oral suspension).
- Common side effects of **Exservan** include oral hypoesthesia, asthenia, nausea, decreased lung function, hypertension, and abdominal pain.

Sources: 1) Drugs.com. *Reblozyl Approval History*. [Internet]; [Nov 18, 2019; cited Nov 19, 2019]. Available from: <https://www.drugs.com/history/reblozyl.html>

2) Drugs.com. *Fetroja Approval History*. [Internet]; [Nov 19, 2019; cited Nov 19, 2019]. Available from: <https://www.drugs.com/history/fetroja.html>

3) Drugs.com. *Exservan Approval History*. [Internet]; [Nov 29, 2019; cited Nov 30, 2019]. Available from: <https://www.drugs.com/history/exservan.html>

Test Your Knowledge

- 1) A grandfather arrives at your pharmacy asking to purchase a bottle of syrup of ipecac to keep in his home in the event of a poisoning when grandchildren are visiting. What should you tell him?
 - A. Administer 15 mL of syrup of ipecac at the first sign of an ingestion.
 - B. Syrup of ipecac is no longer recommended by the American Association of Poison Control Centers and the American Academy of Pediatrics.
 - C. Provide him with the toll- free number for the poison control center.
 - D. Both B and C.
- 2) Which of the following narcotics has the longest duration of effect?
 - A. Methadone
 - B. Controlled- release morphine
 - C. Levorphanol
 - D. Transdermal fentanyl
 - E. Dihydromorphone
- 3) All of the following conditions are causes of hyperthyroidism except
 - A. Graves' disease.
 - B. Hashimoto thyroiditis.
 - C. toxic multinodular goiter.
 - D. triiodothyronine toxicosis.
 - E. Plummer disease.

Real Enquiries

At the "Drug Information Center", we respond to enquiries from the professional healthteam as well as from the community. Here's one of the enquiries received at the center:

Enquiry received from: R.M.-Pharmacy Student, Faculty of Pharmacy-Assiut University

Enquiry: Is there a relationship between peptic ulcer and diabetes?

Summary of the answer:

In addition to well-established risks among diabetic subjects for vascular diseases, renal disease, blindness, and amputations, diabetes also is associated with a poorer outcome from several acute medical conditions, including myocardial infarction, possibly stroke, and certain severe infections.

According to several reports, patients with diabetes tend to experience a higher occurrence of peptic ulcer disease (PUD). Diabetes may also be a risk factor for complicated peptic ulcer disease. Diabetes may influence the outcome of complicated peptic ulcer disease, due to angiopathy, blurring of symptoms, and increased risk of sepsis.

As concluded by a 7-year follow-up using the National Health Insurance Research Database of Taiwan, type II diabetic patients have a higher risk for developing peptic ulcer bleeding compared with the non-diabetic population. In facing diabetic II patients with older age, chronic renal disease, peptic ulcer history, gastric protective strategy, such as taking a PPI, should be considered, and use of NSAIDs should be avoided.

References:

- 1) Thomsen R W, *et al.* Diabetes and 30-Day Mortality from Peptic Ulcer Bleeding and Perforation. *Diabetes Care.* 2006; 29(4): 805-810.
- 2) Tachecí I and Bures J. [Peptic ulcer disease in patients with diabetes mellitus]. *Vnitr Lek.* 2011 Apr;57(4):347-50.
- 3) Peng Y-L, *et al.* Diabetes Is an Independent Risk Factor for Peptic Ulcer Bleeding. *J Gastroenterol Hepatol.* 2013;28(8):1295-1299.

Pomegranate

Common Name: Pomegranate

Latin Name: Punica granatum



Background

- ✓ The pomegranate fruit has a leathery rind (or husk) with many little pockets of edible seeds and juice inside.
- ✓ Since ancient times, the pomegranate has been a symbol of fertility.
- ✓ Researchers have studied all parts of the pomegranate for their potential health benefits. Those parts include the fruit, seed, seed oil, tannin-rich peel, root, leaf, and flower.
- ✓ The pomegranate has been used as a dietary supplement for many conditions including wounds, heart conditions, intestinal problems, and as a gargle for a sore throat.
- ✓ Pomegranate is made into capsules, extracts, teas, powders, and juice products.

Scientific Evidence

We don't have a lot of strong scientific evidence on the effects of pomegranate for people's health.

What Have We Learned?

- ✓ A 2012 clinical trial of about 100 dialysis patients suggested that pomegranate juice may help ward off infections. In the study, the patients who were given pomegranate juice three times a week for a year had fewer hospitalizations for infections and fewer signs of inflammation, compared with patients who got the placebo.
- ✓ Pomegranate extract in mouthwash may help control dental plaque, according to a small 2011 clinical trial with 30 healthy participants.
- ✓ Pomegranate may help improve some signs of heart disease, but the research isn't definitive.

Recommended daily amount

The United States Department of Agriculture recommends that a person eats 2 cups of fruit per day. Pomegranates and their seeds are a nutrient-dense and low-calorie way to hit this target.

Safety

- ✓ Some people, particularly those with plant allergies, may be allergic to pomegranate.
- ✓ It's unclear whether pomegranate interacts with the anticoagulant (blood thinning) medicine warfarin or drugs that work similarly in the body to warfarin.
- ✓ Federal agencies have taken action against companies selling pomegranate juice and supplements for deceptive advertising and making drug-like claims about the products.

Source:

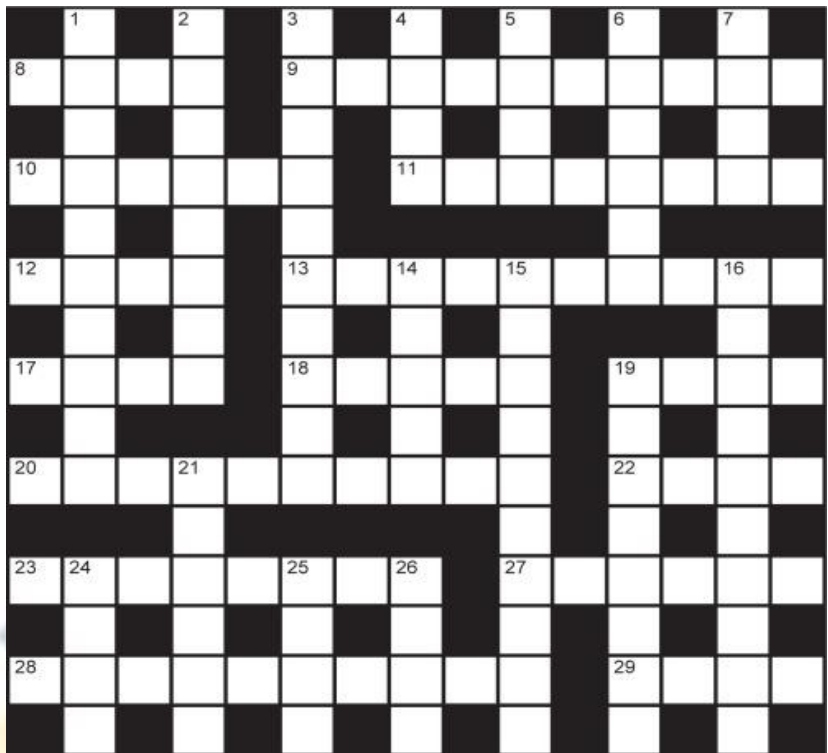
- 1) NCCIH. Pomegranate. [Online];[Updated September 2016; cited November 2019]. Available at: <https://nccih.nih.gov/health/pomegranate/at-a-glance>
- 2) Schaefer A. Can you eat pomegranate seeds? [Online] July 12, 2017; [cited November 14, 2019]. Available at: <https://www.medicalnewstoday.com/articles/318384.php>



Crossword Challenge

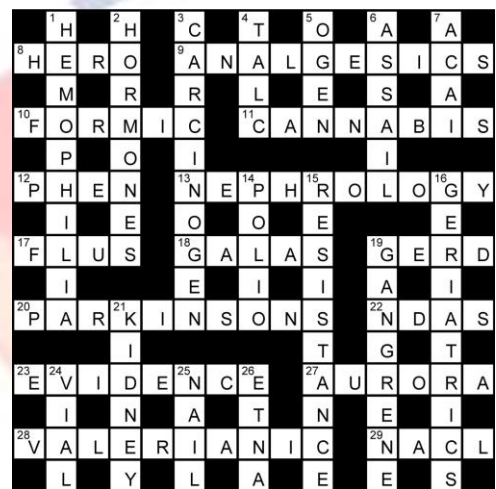
Across

- 8- A pharmacist could be lauded as this in their community
- 9- Painkillers
- 10- Salicylic is a weak form of this acid that is commonly used to treat warts
- 11- CBD comes from this
- 12- Fen-____: controversial diet drug combo withdrawn from the market in 1997
- 13- Medicine specialty pertaining to the kidneys
- 17- More than one of the influenza virus (abbr.)
- 18- Black-tie celebrations
- 19- Patients often take PPIs because of this (abbr.)
- 20- Progressive nervous system disorder that affects movement
- 22- All drugs start with this (abbr.)
- 23- Facts and information from a study
- 27- _____ Borealis
- 28- Active acid component of valerian supplements
- 29- Chemical name for salt



Down

- 1- Disease that causes a lack of blood clotting
- 2- Insulin and estrogen are these
- 3- Substance that causes cancer
- 4- Powder that has recently been in the news for toxic effects
- 5- Small melon with green skin and sweet pale green flesh
- 6- Lash out at
- 7- Berry rich in antioxidants
- 14- Jonas Salk's conquest
- 15- Antibiotic _____ is a growing problem
- 16- Specialty focusing on older adults
- 19- Death of body tissue, often caused by a lack of blood flow
- 21- Changes in the function of this organ often lead to different doses for medications
- 24- Medication container
- 25- Onychomycosis is associated with this body part
- 26- If you add one letter at the beginning, this becomes a major health insurance plan



Test Your Knowledge Answers:

1. **D)** Induced vomiting is no longer an acceptable option of managing poisonings at home because it is a relatively ineffective method of removing toxins and results in a delay in administering antidotal therapy. It is important to counsel patients on poison prevention and to give parents, friends and relatives the number for the poison control center. Parents should also know basic first aid and cardiopulmonary resuscitation.
2. **D)** Transdermal fentanyl is a controlled- release dosage form that is effective for up to a 72-hr period. All the other drugs listed in the question are effective for periods of 1-8 hr.
3. **B)** Hashimoto thyroiditis (chronic lymphocytic thyroiditis) is a cause of hypothyroidism. The incidence of Hashimoto thyroiditis is 1%-2%, and it increases with age. It is more common in women than in men and more common in whites than in blacks. There may be a familial tendency.