PATIENT INFORMATION:
Foot Fungus

What is Foot Fungus?
Foot fungus is a minor infection of the skin of the foot which is relatively harmless if treated early. Tinea pedis, often referred to as athlete’s foot, is the most common form of foot fungus. Another potential infection is tinea corporis, or ringworm. Foot fungus can be both physically and emotionally embarrassing. Usually caused by *Epidermophyton* and *Trichophyton* species, tinea pedis can be difficult to treat. The infection should be treated as soon as possible to avoid worsening symptoms and spreading infection.

Tinea pedis tends to stay on the feet, but if not treated, can spread. Often, athlete’s foot is first noticed between the two small toes. With time, the infection spreads to the bottom and sides of the foot. When on the sole of the foot, the fungus causes the skin to thicken and become scaly.

Tinea corporis will not affect the nails, but tinea pedis can spread to the nails. Onychomycosis is the term used when a fungal infection has spread to the nail. A nail infection can be very painful and make walking extremely difficult. Tinea unguium is a rarer, more specific nail infection, not a general onychomycosis infection. It is difficult to differentiate tinea unguium from a general onychomycosis infection.

Fungi thrive in dark, warm, moist environments, such as shoes and bathing areas. Failing to have proper fitted shoes can make the feet susceptible to infections.

How Do I Know If I Have Foot Fungus?
Foot fungus can present a few different ways, but there are some signs to look for. Most people report burning and itching, as well as redness and peeling, of the area. Scaling and peeling on the bottom of the foot and between the toes are the most likely places to find athlete’s foot. Ringworm presents as a red ring with a raised outline and a flattened center. All foot fungus will cause the foot to emit a pretty strong odor.

What Can I Do To Treat It?
There are some over-the-counter medications that can be used to treat foot fungus. Treatment can last for a couple weeks to a couple months. Antifungal products come in different forms. Talk to your pharmacist about the best therapy for you and use the product as directed!

Look for these products at your local pharmacy:

- **Athlete’s Foot:** Lotrimin® ( clotrimazole) and Tinactin® (tolnaftate)
- **Ringworm:** Lamisil® (terbenafine) and Tinactin® (tolnaftate)
- **Nail involvement:** Lamisil® (terbenafine)

If symptoms do not improve with over-the-counter treatment, talk to your doctor about a prescription.

How Can I Prevent Foot Fungus?

- Wash your feet with soap and water every day
- Dry your feet and shoes when they get wet
- If your feet sweat a lot, bring an extra pair of socks to change into during the day
- Wear flip flops in communal showers and at pools
- Examine your feet often

By Andrew Clavelot, PharmD Candidate
The new JNC 8 guideline, published December 18, 2013, was created using an arduous, evidence-based evaluation system. Treatment and goals of HTN management were determined from RCTs and the expert opinion of panel members. Because RCTs are less subject to bias and are considered gold standard, RCTs were the only study design allowed when the panel reviewed evidence. JNC 8 panel members consisted of experts in hypertension from several medical disciplines. The recommendations from this guideline are not intended to be a substitute for clinical judgment. Patients should be evaluated on case-by-case basis for management of hypertension.

JNC 8 guideline recommendations were directed by the following questions, which address BP thresholds, treatment goals, and drug classes for specific indications in adults with hypertension.

1. Does initiating antihypertensive pharmacologic therapy at specific BP thresholds improve health outcomes?
2. Does treatment with antihypertensive pharmacologic therapy to a specified BP goal lead to improvements in health outcomes?
3. Do various antihypertensive drugs or drug classes differ in comparative benefits and harms on specific health outcomes?

What’s not addressed in JNC 8?
- BP classification
- Treatment adherence
- Treatment strategies
- BP monitoring
- Patient evaluation
- Secondary HTN
- Resistant HTN
- HTN in pregnancy
- HTN crisis
- HTN in special populations

Recommendation #1
In the general population ≥60 years, initiate treatment if SBP ≥150 mmHg OR DBP ≥90 mmHg.
Goal: BP <150/90 mmHg reduces CHD, HF, and stroke.
Grade A (strong recommendation)

Corollary Recommendation
In the general population ≥60 years, if treatment yields BP <140 mmHg and is tolerated with no adverse effects, then no treatment adjustment is necessary.
Grade E (expert opinion)

Recommendations #2 & #3
In the general population <60 years, initiate treatment if SBP >140 mmHg OR DBP >90 mmHg.
Goal: BP <140/90 mmHg.
Grade A—30-59 years; Grade E—18-29 years.

Recommendations #4 & #5
Individuals >18 years with CKD and/or diabetes, initiate treatment if SBP >140 mmHg OR DBP >90 mmHg.
Goal: BP <140/90 mmHg.
Grade E.

Recommendation #6
In general nonblack population including those with diabetes.
First line treatment includes thiazide-type diuretics or CCB.
Grade B (moderate recommendation)

Recommendation #7
First line treatment includes thiazide-type diuretics or CCB.
Grade C (weak recommendation)

Recommendation #8
Individuals ≥18 years with CKD.
First line or add on treatment (to improve kidney function) includes ACEi or ARB.
Grade B.

Recommendation #9
Main treatment objective is to attain and maintain goal BP.
If goal not reached in 1 month, increase dose of initial drug or add on drug from recommendation #6.
If goal not reached with 2 first line agents, may add loop diuretic, BB, α-blocker, or aldosterone antagonist.
If goal not reached with 3 drugs or contraindication present, other drug classes may be used.
DO NOT use ACEi and ARB together.

By Ondrea Cowser, PharmD Candidate

REFERENCES:
Addiction Versus Pseudoaddiction

Pseudoaddiction and addiction can display similar behaviors making it difficult to tell the two syndromes apart. However, they are caused by different mechanisms and should be treated differently. Addiction is a complex disease with genetic, psychosocial, and environmental factors. Pseudoaddiction is related to pain control, not addiction pathology.

Both addiction and pseudoaddiction can present with aberrant drug-related behaviors (ADRBs), which are medication-related behaviors that do not follow the prescribed therapeutic plan. Pseudoaddiction causes ADRBs because a patient’s pain is uncontrolled. These ADRBs can look like drug-seeking behavior, but once the patient’s pain is adequately treated, these behaviors should abate. Addiction causes ADRBs that are related to euphoria-seeking behavior.

Some ADRBs are more indicative of addiction. ADRBs may present differently when a patient is trying to control pain versus seeking euphoria (ie, pseudoaddiction versus addiction). Recognizing the differences between ADRBs in practice will help providers accurately diagnose addiction and pseudoaddiction and provide appropriate care.

ADRBs more indicative of addiction:
- Injection of prescribed medications
- Buying or selling prescription drugs from nonmedical sources
- Obtaining prescriptions from multiple prescribers without pain clinician’s knowledge or “Doctor shopping”
- Illicit drug or alcohol abuse
- Decrease in work, social, or home functioning
- Multiple “lost” or “stolen” prescriptions

ADRBs less indicative of addiction:
- Complaining to staff about need for more medication
- Openly attaining medications from other providers
- Asking for certain medications
- Drug hoarding between pain exacerbations

Patients with chronic pain taking chronic opioid therapy may display tolerance, physical withdrawal with discontinuation, and continuation of use despite harmful consequences (e.g., side effects). This makes diagnosing addiction very difficult in these patients. Patients with chronic pain may be reluctant to change therapy because they are afraid to experience increased pain levels. Providers should carefully watch patients who refuse to change therapy when the patient’s life is seriously adversely affected by physiological and psychological side effects of the medication.

To prevent abuse and limit pseudoaddiction/pain undertreatment, prescribers should implement universal precautions for all controlled analgesic prescriptions:
- Appropriately diagnose and treat underlying disorders
- Explore alternative therapies
- Perform addiction risk assessment including family and personal history of addiction
- Set realistic goals for pain control with patient
- Monitor for medication abuse and ADRBs
- Perform random drug screens and pill counts
- Talk with friends and family of patient (with patient consent) about patient’s behavior and pain control
- Have patient agree to a medication contract
- Give appropriate medications based on duration of action of medications
- Provide patient education about prescription misuse/abuse and how to safeguard medications at home

Aberrant drug-related behavior can lead to considerable friction between patients and medical personnel. These behaviors can be frustrating but may signal that a patient needs the support of his/her clinician more than ever. Pain can be very distressing, and patients should not be labeled as “addicts” without proper analysis of symptoms and behavior. If ADRBs become a problem with a particular patient and addiction is suspected, the provider may prescribe smaller amounts of medication at a time, see the patient more frequently, or support the patient with non-opioid therapy. Discontinuing care should be the last resort because the provider/patient relationship can be very beneficial in patients’ pain perception and addiction treatment and prevention.

By Anna Howard, PharmD Candidate

REFERENCES:
What is Eosinophilic Esophagitis?
Eosinophilic esophagitis (EoE) is an allergic reaction in your throat to food, pollen, or other allergens. In EoE, a type of white blood cell, called eosinophils, multiply and cause inflammation. This constant inflammation can eventually cause scarring and narrowing of your esophagus. The majority of cases are in children, but more and more adults are being diagnosed with EoE.

Symptoms
Difficulty swallowing
Food getting stuck in your throat
Regurgitation
Heartburn
Chest pain
Upper abdominal pain

Possible Causes of EoE
Food allergies
Environmental allergies
Atopic dermatitis
Asthma
Chronic respiratory disease

Testing
Allergy tests are used to determine the cause of your symptoms. These tests help your healthcare provider determine if you react to food or things in the environment.

- Prick skin test
- Blood test
- Food patch test

Diet
Since food allergens are the most common cause of EoE, you can change your diet to manage your symptoms.

Eliminating dairy products, eggs, nuts, wheat, soy, and fish from your diet is a good way to determine if any particular food is causing your symptoms if you have not been tested. After several weeks, introduce back certain foods to see if your symptoms return.

If you are diagnosed with an allergy to a particular food, you should eliminate it from your diet. It will take a few weeks for your symptoms to improve.

To reduce your heartburn or acid reflux symptoms: avoid spicy foods, alcohol, caffeine, and fatty foods.

Lifestyle
Avoid things that trigger your symptoms, such as pollen, mold, or a specific type of food.

Medication
Currently, there is no medication available to cure EoE. However, the use of steroid sprays, steroid inhalers, or proton pump inhibitors can help reduce your symptoms. Some examples of these medications are listed here:

- **Steroid Sprays**
  - Flonase® (fluticasone)
  - Rhinocort® (budesonide)
- **Steroid Inhalers**
  - Flovent® (fluticasone)
  - Pulmicort® (budesonide)
- **Proton Pump Inhibitors**
  - Prilosec® (omeprazole)
  - Prevacid® (lansoprazole)

For more severe swelling and inflammation, your healthcare provider will likely prescribe a steroid, such as prednisone, to be taken by mouth.

Biologic therapy (antibodies against eosinophils) is not recommended as a treatment option at this time because it has not been found to improve symptoms of EoE.

Healthcare Providers
Keep in touch with your healthcare team. You may need to work with several healthcare professionals to get the best care possible.

By Kaitlyn McDonald, PharmD Candidate

REFERENCES:
Foot Fungus References (from page 1)


SIDS References (from page 7)


Afrezza® (inhaled insulin)

Afrezza® is a rapid-acting orally inhaled human insulin approved in June 2014 for treatment of hyperglycemia in adults with diabetes mellitus. Afrezza® is an alternative to injected mealtime insulin in people with type 1 and type 2 diabetes that reduces the number of injections necessary to achieve glycemic control.

Four multicenter, international, phase III, randomized, controlled trials in patients with type 1 and type 2 diabetes assessed the effectiveness in reduction of HbA1c with Afrezza® versus standard insulin regimens. The results of the four studies are presented in the table below. These trials were limited by their open-label designs and inability to generalize their results to specific patient populations with certain HbA1c levels and ethnicities.

<table>
<thead>
<tr>
<th>Afrezza® Trials</th>
<th>Trial 1</th>
<th>Trial 2</th>
<th>Trial 3</th>
<th>Trial 4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Patient Population</strong></td>
<td>Type 1 diabetes</td>
<td>Type 1 diabetes</td>
<td>Type 2 diabetes</td>
<td>Type 2 diabetes</td>
</tr>
<tr>
<td><strong>No. of Patients</strong></td>
<td>244</td>
<td>539</td>
<td>353</td>
<td>618</td>
</tr>
<tr>
<td><strong>Study Design</strong></td>
<td>Non-inferiority, open-label</td>
<td>Non-inferiority, open-label</td>
<td>Superiority, double-blind</td>
<td>Non-inferiority, open-label</td>
</tr>
<tr>
<td><strong>Study Duration</strong></td>
<td>24 weeks</td>
<td>52 weeks</td>
<td>24 weeks</td>
<td>52 weeks</td>
</tr>
<tr>
<td><strong>Study Treatments</strong></td>
<td>Insulin aspart + basal insulin vs. Afrezza® + basal insulin</td>
<td>Insulin aspart + basal insulin vs. Afrezza® + basal insulin</td>
<td>Oral hypoglycemic medications + placebo vs. Oral hypoglycemic medications + Afrezza®</td>
<td>Biphasic intermediate/rapid-acting 70/30 insulin vs. Afrezza® + basal insulin</td>
</tr>
<tr>
<td><strong>Results</strong></td>
<td>Afrezza® was not inferior to insulin aspart in reduction of HbA1c but more patients in insulin aspart group reached the HbA1c target of ≤ 7%</td>
<td>Afrezza® was not non-inferior to insulin aspart in reduction of HbA1c (insulin aspart lowered HbA1c more than Afrezza®), but both treatments resulted in similar percentages of patients who met HbA1c target ≤ 7%</td>
<td>Afrezza® was superior to placebo in reduction of HbA1c and more patients on Afrezza® achieved an HbA1c ≤ 7%</td>
<td>Afrezza® + basal insulin was non-inferior to 70/30 insulin in reduction of HbA1c and similar percentages of patients achieved HbA1c ≤ 7%</td>
</tr>
</tbody>
</table>

Common side effects with Afrezza® (% of patients in clinical trials):
- Cough (25.6% vs. 19.7% with placebo, and 29.4% vs. 49% vs. subcutaneous insulin)
- Diarrhea
- Nausea
- Headache
- Urinary tract infection
- Bronchitis
- Hypoglycemia
- Decreased pulmonary function
- Throat irritation

Rare side effects:
- Fluid retention
- Heart failure
- Diabetic ketoacidosis
- Hypokalemia
- Anaphylaxis
- Acute bronchospasm

Afrezza® is contraindicated in patients who have chronic lung disease including asthma and COPD due to the risk of acute bronchospasm. Before initiating Afrezza®, patient history should be reviewed and spirometry performed to check for possible lung disease. Other contraindications to Afrezza® include hypersensitivity to any component of Afrezza® and use during periods of hypoglycemia. There is no information about the safety and efficacy of Afrezza® in patients who smoke or recently stopped smoking, those under the age of 18, and those who are pregnant or breastfeeding.

Afrezza® should be administered just before a meal using the Afrezza® inhaler, a breath-powered delivery form. Afrezza® is supplied in four and eight unit cartridges. The table on page 5 provides the recommended conversion from subcutaneous injected insulin to Afrezza®.

By Kellie Rogers, PharmD Candidate

References on Page 5
PATIENT INFORMATION:
Sudden Infant Death Syndrome

SIDDS is the death of an infant (<1 year old) that cannot be explained by other causes such as suffocation, injury, or an illness. SIDS deaths occur suddenly with no signs of previous illness.

Most cases of SIDS occur while an infant is sleeping. SIDS deaths are more likely in infants between the ages of four and six months. SIDS is also more common in African American and Native American infants.

The cause of SIDS is not known, but is likely due to a combination of factors. Because the exact cause of SIDS is not known, it is important to decrease the risk any way you can.

⇒ Visit your healthcare provider regularly to receive prenatal care while pregnant
⇒ Do not smoke and avoid second hand smoke
⇒ Do not use alcohol or illegal drugs
⇒ Place your baby on their back to sleep for naps and at night – “Back to Sleep”
⇒ Use a firm mattress in the crib
⇒ Use only a fitted sheet in the crib
⇒ Do not place crib bumpers, blankets, stuffed animals, or other soft objects where your infant sleeps
⇒ Place your infant in their own crib to sleep
⇒ Sleeping in the same room as your infant is ok, but do not share a bed
⇒ Give your infant a pacifier before they fall asleep
⇒ Avoid rooms that are too hot
⇒ Signs that your infant is too warm include their chest being hot to your touch and sweat
⇒ Breast feed your infant
⇒ Get your infant vaccinated

Follow all advice from your healthcare provider.
It is important to place your infant on their back every time they sleep.

Choking:
If they throw up or spit up, infants automatically cough or swallow fluid to clear their airway while lying on their back.

A flat spot developing on the back of your infant’s head:
Switching the side of the head your infant lays on and providing time off of the back while your infant is awake can help to prevent this. If a flat spot does develop, it is usually harmless and often goes away a couple of months after your infant learns to sit.

Your infant rolling onto their stomach:
Place your infant on their back when you lay them down. If they are able to roll themselves over, you do not need to move them onto their back if they roll onto their stomach.

“Back to Sleep, Tummy to Play”
It is important for infants to spend time on their stomachs when they are awake and being watched by an adult.

Tummy time helps an infant to build strong neck and back muscles. These muscles will help them to roll over, crawl, and sit. Tummy time also helps prevent flat spots on the back of your infant’s head.

Tummy time can start right after birth. Place your infant on their stomach a couple of times each day. Pick your infant up or change their position when they begin to cry.

By Kellie Rogers, PharmD Candidate

References on Page 5