Description: Methicillin-resistant *Staphylococcus aureus* (MRSA) is a bacterium responsible for several difficult-to-treat infections in humans; however, *Staph. aureus* is an organism that is considered part of our healthy skin and respiratory flora. This organism is difficult to manage using antibiotics because of its marvelous ability to adapt, yet seemingly simple to manage when we take a different approach using herbal medicine.

Track: Intermediate/Advanced

Objectives:
1. Put together an effective strategy and select from four major categories of herbs to treat acute bacterial infection.
2. Understand the severity of an acute infection based on physical exam, signs and symptoms, and know when it is imperative to refer.
3. Identify and employ strategies for preventing re-infection.

Four Major Strategies When Using Herbs:
1. Tan their bacterial hides
   a. Tannin-rich herbs are known to be bacteriostatic due to their chemical tendency to bind proteins. Bacteria rely on their slimy ‘films’ in order to reproduce and advance an infection.
      i. *Quercus spp.* bark
      ii. *Camelia sinensis* leaf
      iii. *Theobroma cacao* seed
2. Stimulate an immune arsenal
   a. Immune stimulating herbs increase macrophage activity
      i. *Echinacea angustifolia* root
      ii. *Usnea spp.* thallus
      iii. *Tabebuia avellanedae* bark
      iv. *Larrea tridentata* leaf
      v. *Hypericum spp.* flower
3. Directly kill the bacteria
   a. Volatile oils are able to penetrate through most cell membranes and walls due to their small molecular weight. They vary in strength and spectrum. The ones that are effective against MRSA will work for a short time only and a variety should be used and
rotated often throughout the course of treatment to avoid the development of resistance.
   i. Thymus vulgaris
   ii. Lavandula angustifolia
   iii. Cinnamomum spp.
   iv. Oreganum vulgare
   v. Satureia Montana
   vi. Santalum spicatum

4. Enhance host resiliency and facilitate adaptation
   a. Health is often described as a state of mind. Reaction to stress, including reacting to the diagnosis of MRSA, impacts an individual’s ability to successfully beat an acute infection as well as clear a chronic carrier status.
      i. Panax quinquefolius root
      ii. Eleuthrococcus senticosus root
      iii. Glycyrrhiza glabra root
      iv. Rehmannia glutinosa root
      v. Avena sativa straw & milky seed
      vi. Schisandra chinensis fruit
      vii. Withania somnifera root
      viii. Occimum sanctum herb

**Evaluating Severity of Infections and Distinguishing MRSA**

1. If you are not an experienced practitioner, it might be of great risk to yourself and others if you choose to treat serious infections on your own. I’m not saying you can’t do it… I just caution you to use your intuitive sense and training to “first do no harm” by referring to someone who has more experience than you if it seems like the right thing to do.

2. External presentations of MRSA
   a. Pustules
      i. Commonly begins as a moderately angry pimple or boil
      ii. Surrounding tissue is red, hot to the touch, and expanding
      iii. Frequently appears as a cluster of boils or large pimples
   b. Ulcerations
      i. Begins as a wound
      ii. May begin as a stasis ulcer
      iii. Easily spread to other areas of the body by touch
   c. Styes
      i. Generally acquired by touching an infected wound or surface and rubbing the eye
      ii. Involves the surrounding tissue, causing redness that extends to clear borders around the orbit
   d. Blisters and rashes
      i. Impetigo
1. Collection of clear blisters overlying red, hot area of skin. Exudes yellow, honeylike serous fluid
2. Usually occurring at nailbeds, scalp, nasal nares, behind ears
   ii. Cellulitis
      1. Diffuse, hot, red, tight area of skin
      2. Usually accompanied by fever
      3. Often with small red bumps
3. Internal presentations of MRSA
   a. Pneumonia
      i. Multi-lobar lung involvement
      ii. Previous exposure to MRSA
      iii. Preceding influenza or other debilitating illness
      iv. Culture and Sensitivity is the only way to be sure it’s MRSA (takes 48-72 hours)
   b. Mastitis
      i. Diffuse, firm, hot, red infection with fever
   c. Meningitis
      i. Preceding influenza or other debilitating illness
      ii. High fever, nausea, vomiting
      iii. Severe headache
      iv. Kernig’s & Brudziński’s signs
   d. Urinary Tract Infection
      i. Worsens with mannose
      ii. Fever and persistence
   e. Food Poisoning
      i. Enterotoxins released in food cause massive immune attack
      ii. Food is not generally accepted as a source of MRSA infection
   f. Toxic Shock Syndrome
      i. Fever and malaise progresses to shock, loss of consciousness, and multiorgan failure as superantigens are released into the bloodstream evoking a massive inflammatory response
   g. Nosocomial (hospital acquired)
      i. Most common source of MRSA acquisition
      ii. 5% of healthcare workers are carriers of MRSA in their respiratory mucosa

**Strategies for Preventing MRSA Infections from Recurring**
1. Foundations for Health
   a. Fresh air, clean water, quality food, circadian rhythm, detoxification, laughter, exercise, fulfillment
2. Identify stress thresholds
   a. What are the first signs of stress?
      i. Mental confusion, fatigue, sense of overwhelm
      ii. Anger, irritability, withdrawal
b. What are the likely triggers for immune system dysfunction?
   i. Overconsumption of sugar, alcohol, certain foods
   ii. Overworking, sacrificing sleep for other activities
   iii. Seasonal changes

3. Adaptogenic and immunomodulating herbs
   a. *Panax quinquefolius* root
   b. *Eleuthrococcus senticosus* root
   c. *Glycyrrhiza glabra* root
   d. *Rehmannia glutinosa* root
   e. *Avena sativa* straw & milky seed
   f. *Schisandra chinensis* fruit
   g. *Withania somnifera* root
   h. *Occimum sanctum* herb
   i. *Ganoderma lucidum* fruiting body
   j. *Lentinula elodes* fruiting body
   k. *Grioffola frondosa* fruiting body
   l. *Trametes versicolor* fruiting body
   m. *Astragalus membraneceus* root

4. Probiotics and prebiotics
   a. Garlic baths sound strange and unpleasant, yet it is an effective strategy in reducing *Staph. aureus* colonization of the skin
   b. After a bath, dust the skin while still fairly damp with powdered *Acidophilus* product mixed 1:1 with an agreeable body powder (cornstarch, talc, clay, baking soda, marshmallow root powder, etc)
   c. Use a powdered probiotic mixed with a half-ounce of water as a ‘swish-and-swallow’ mouth rinse to effectively colonize the respiratory tract
   d. Use large doses of reflex demulcent herbs at the first sign of respiratory, urinary, or digestive irritation as prebiotics, mucus membrane enhancers, and immunomodulators
      i. *Althaea officinalis* root
      ii. *Ulmus fulva* bark
      iii. *Glycyrrhiza glabra* root (DGL)
      iv. *Inula helenium* root
      v. *Helianthus tuberosus* root
Resources:


