

## Tropical dermatology: Bacterial and viral infections

by Kristen Whitney, DO

Disease	Organism	Clinical Findings	Treatment/Misc.
<b>Bacterial Infections</b>			
<b>Yaws</b>	<i>Treponema pallidum</i> (sub-species <i>pertenue</i> )	<u>Primary</u> : Erythematous papule at site of inoculation ("mother yaw)." <u>Secondary</u> : Numerous smaller "daughter yaws" often near orifical sites. <u>Tertiary</u> : Skin abscesses that ulcerate; bone, joint and soft tissue deformities.	Benzathine Penicillin G
<b>Pinta</b>	<i>Treponema carateum</i>	Skin only involvement. <u>Primary</u> : Enlarging papule that progresses to infiltrative plaque. <u>Secondary</u> : Small scaly papules that progresses to psoriasiform plaques. <u>Tertiary</u> : Depigmented patches.	Benzathine Penicillin G
<b>Endemic syphilis (Bejel)</b>	<i>Treponema pallidum</i> (sub-species <i>endemicum</i> )	<u>Primary</u> : Skin lesions rare. <u>Secondary</u> : Mucous membrane patches, papular skin eruptions, condyloma lata, lymphadenopathy. <u>Tertiary</u> : Gumma formation of skin, bones, cartilage, mucous membrane.	Benzathine Penicillin G
<b>Buruli ulcer</b>	<i>Mycobacterium ulcerans</i>	Nontender nodule that progresses to ulceration.	Excision, heat, streptomycin and rifampin.
<b>Tropical ulcer</b>	Polymicrobial <i>Fusobacterium</i> , <i>Bacillus fusiformis</i> , <i>Treponema vincenti</i>	Painful, rapidly growing ulcer, often on leg.	Tetracycline and metronidazole.
<b>Cutaneous tuberculosis-scrofuloderma</b>	<i>Mycobacterium tuberculosis</i>	Deep abscesses in skin resulting from contiguous spread from underlying tuberculosis lymphadenitis (lymph nodes) or infection of bones/joints.	Rifampin, Isoniazid, Pyrazinamide, Ethambutol.
<b>Tropical pyomyositis</b>	<i>Staphylococcus aureus</i>	Abscesses in muscles on limbs and extremities.	Surgical drainage, IV antibiotics.
<b>Typhoid fever</b>	<i>Salmonella typhi</i>	"Rose spots" often on abdomen.	Ciprofloxacin or Amoxicillin.
<b>Brucellosis</b>	<i>Brucella</i> spp.	Malodorous perspiration, skin lesions in less than 10% (violaceous papulonodules, erythema nodosum, cutaneous vasculitis), fevers, arthralgias, hepatosplenomegaly.	Doxycycline and Rifampin.
<b>Granuloma inguinale</b>	<i>Klebsiella granulomatosis</i>	Painless ulceration with beefy red granulation tissue in the genital region.	Streptomycin, Chloramphenicol, Azithromycin, Bactrim or Tetracyclines.  Donovan bodies on histology.
<b>Chancroid</b>	<i>Haemophilus ducreyi</i>	Painful, non-indurated ulcer and buboes.	Azithromycin, Ceftriaxone or Ciprofloxacin.  School of fish pattern on gram staining.
<b>Leprosy</b>	<i>Mycobacterium leprae</i>	<u>Tuberculoid</u> : Hypopigmented, anesthetic, anhidrotic plaque. <u>Lepromatous</u> : Symmetric, skin-colored to erythematous macules/papules/nodules, leonine facies, madarosis, enlarged peripheral nerves.	<u>Pauibacillary</u> : Dapsone and Rifampin.  <u>Multibacillary</u> : Dapsone, Rifampin, and Clofazamine.



Kristen Whitney, DO, recently graduated from residency and will be an attending physician at a private practice in Pittsburgh, Pennsylvania

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<b>Bacterial Infections (cont.)</b>			
<b>Actinomycotic mycetoma</b>	<i>Nocardia</i> spp, <i>Actinomadura</i> spp and <i>Streptomyces somaliensis</i>	Granulomatous infection of dermal and subcutaneous tissue; draining sinuses containing grains, local edema.	Actinomycotic-Streptomycin or Amikacin plus Bactrim or Dapsone.  Splendore-Hoeppli phenomenon on histology.
<b>Vibrio infection</b>	<i>Vibrio vulnificus</i>	Painful, hemorrhagic bullae with underlying cellulitis, fever, chills, abdominal pain.	Oral tetracyclines or 3 <sup>rd</sup> generation cephalosporins.
<b>Rhinoscleroma</b>	<i>Klebsiella rhinoscleromatis</i>	Granulomatous nodule, often intranasal that can grow into a large tumor.	Long-term antibiotics, surgery.  Russell bodies and Mikulicz cells on histology.
<b>Glanders</b>	<i>Burkholderia mallei</i>	Fever and one of the following: nodule with lymphadenitis or mucous membrane ulceration, or septicemia with cutaneous papules/pustules, or pulmonary form.	Augmentin, Doxycycline, TMP-SMX.
<b>Melioidosis</b>	<i>Burkholderia pseudomallei</i>	Pustules or subcutaneous abscesses, high fevers, rigors, diarrhea, jaundice.	Supportive care, draining of abscesses, and antibiotic therapy.
<b>Bartonellosis (Carrion's disease)</b>	<i>Bartonella bacilliformis</i>  Transmitted by <i>Lutzomyia verrucarum</i> sandfly	<u>Acute stage</u> (Oroya fever): Fever, arthralgias and hemolytic anemia.  <u>Chronic stage</u> : Erythematous papules/nodules	Chloramphenicol, penicillins, aminoglycosides (acute phase); rifampin, streptomycin (chronic phase).
<b>Viral Infections</b>			
<b>Viral hemorrhagic fevers</b>	Ebola, Marburg, Lassa, Hantavirus, Yellow fever, Rift Valley fever, Crimean-Congo hemorrhagic fevers, viruses  <u>Yellow fever</u> : <i>Aedes aegypti</i> mosquito <u>RVE</u> : <i>Aedes</i> mosquito, contact with infected tissue <u>Ebola, Marburg</u> : Bats and contact with infected human tissue <u>Crimean-Congo</u> : Tick-borne, contact with infected human tissues <u>Hanta, Lassa</u> : Rodents	Non-specific cutaneous eruptions (petechiae, purpura, mucosal hemorrhage), clinically ranges from mild, self-limited disease to severe, fatal disease.	Supportive care.  Hantavirus, Rift Valley fever and Lassa virus respond to Ribavirin.
<b>Dengue fever</b>	Dengue virus  Transmitted by <i>Aedes</i> mosquito	Asymptomatic infection to life-threatening; fever, headaches, retroorbital pain, severe joint pains; morbilliform or scarlatiniform exanthem with islands of sparing in 50%, petechiae, gingival bleeding.	Supportive care.
<b>West Nile virus</b>	West Nile virus  Transmitted by <i>Culex</i> mosquito	Fever, headaches, encephalitis, myalgias, nausea, vomiting, eye pain; exanthem in up to 25%.	Supportive care.

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<b>Viral Infections (cont.)</b>			
<b>Chikungunya fever</b>	Chikungunya virus  Transmitted by <i>Aedes aegypti</i> mosquito	Fever, headaches, nausea, vomiting, myalgias, several cutaneous presentations (morbilliform, vesiculobullous, acral/facial erythema and genital, intertriginous and oral ulcers), severe low back pain and arthralgias.	Supportive care.
<b>Adult T-cell leukemia/lymphoma</b>	HTLV-1 (human T-lymphotrophic virus type 1)  Transmitted person-to-person through blood or sexual contact	<u>Acute</u> : leukemia, lymphadenopathy, organomegaly, skin lesions. <u>Chronic</u> : patches/plaques/papular skin lesions (resembles mycosis fungoides).	Zidovudine and IFN- $\alpha$ , chemotherapy.
<b>Monkeypox</b>	Monkeypox virus  Transmitted by contact with infected person or animal via body fluids	Flu-like symptoms, diffuse papular eruption that progresses to vesiculopustules then crusts.	Supportive care.
<b>Zika virus</b>	Zika virus  Transmitted by <i>Aedes</i> mosquito	Exanthem in 90% (morbilliform/small papules, descends from trunk to lower body) arthritis, conjunctivitis, and headache. Fever is not prominent and low-grade if present.	Supportive care  WHO named Zika a global health threat (2016) as in utero infection can cause microcephaly in fetus

**References**

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