I am going to discuss some FDA approved drugs, and some that are used off-label.

Objectives
- Tropical skin conditions on the rise
- Dermatologists need to be alert for unfamiliar tropical diseases
- Climate change expands the range of vectors
- Dermatologists could face skin maladies in migrants & refugees
- Recognize bizarre cutaneous entities
Cutaneous Leishmaniasis: Key points

- Neglected tropical disease
- Occurs worldwide
- Transmitted by sandfly bite
- CL: around one million new cases/year
- Zoonosis (dogs)
- Travelers’ disease
- DX: direct smear/biopsy/PCR

Cutaneous Leishmaniasis: Current Treatment Practices in the USA for Returning Travelers

Daniel P. Zineh, MD, MPH, Laura A. Kirkman, MD, and Henry W. Murray, MD

Opinion statement

Leishmaniasis, a protozoan infection transmitted by sandfly bite, produces a clinical spectrum of disease ranging from asymptomatic infection to severe debilitating chronic involvement. Leishmaniasis is endemic in regions of Africa, the Middle East, South Asia, southern Europe, northern South America, and Central America. There has been an increase in imported leishmaniasis into developed, non-endemic countries due to increasing global travel. While prototype antimonials have been the mainstay of antimonial treatment for decades, newer therapeutic options have become available for all forms of infection, including liposomal amphotericin B, miltefosine, paromomycin, and sodium stibogluconate. For the emerging problem with cutaneous leishmaniasis in the USA, treatment approaches are determined based on infecting species, initial presentation, extent and progression of disease, the advantages and disadvantages of available parenteral and oral drugs, and clinician circumstances.

CL: RX Pearl

(Clinical photo courtesy of Dr. Marco Quintanilla)

Treatment for travelers

- Pentavalent antimonials: first line RX
- Surgery in case of small lesions
- Itraconazole, 200 mg PO/day/6 weeks
- Amphotericin B, IV (liposomal)
- Miltefosine, PO, FDA (2014)
- 2.5 mg/kg/day/one month → alternative option ($$$)


RX Pearls

- L. mexicana: no RX/local or systemic treatment
- V. braziliensis / L. panamensis: systemic treatment only
- Systemic RX:
  - Risk of developing MCL
  - Failure local RX
  - Size, number and location of lesions
  - Lymphatic spread

LeishMan Recommendations for Treatment of Cutaneous and Mucosal Leishmaniasis in Travelers, 2014

Johannes Blum MD, Pierre Buffet MD, Leo Visser MD, Gundel Harms MD, et al.

Article first published online: 19 DEC 2013
DOI: 10.1111/jtm.12089 © 2013 International Society of Travel Medicine

Cutaneous Leishmaniasis: Clinical photos courtesy of Dr. Marco Quintanilla
Clinical cases #2

Myasis:
Key points
- Infestation of the skin by fly larvae
- Dermatobia hominis & Cordylobia anthropophaga
- Boil like lesions, #1-3, furuncular
- Painful, movement inside
- Travelers' disease
- DX: US, CT scan
- RX: topical stuff, surgery, oral ivermectin

Furuncular myasis in a traveler: Surgery

Myasis in venous ulcers: Management with water + tobacco

Myasis in travelers': RX Pearl

Prevention & Treatment
- Prevented with repellents (DEET), appropriate clothes
- Vaseline, pork fat, mineral oil, chimo top of the furuncle
- Topical 1% ivermectin solution
- Ivermectin PO: 200 µg/kg once
- Surgical extraction is a good treatment to clean the wound properly

Clinical cases #3
Cutaneous larva migrans:

Key points
- Etiology in Mexico: *A. caninum*
- Within 2 weeks from a trip to a beach
- Most cases from Gulf of Mexico beaches
- Beaches with dogs (feces)
- Walking barefoot, lying on the beach
- Spring break & summer/ travelers’ disease (most common)
- Creeping eruption, 1-2 cm/day, severe itch / larvae die in 2-8 weeks

**DX & RX Pearls**
- Diagnosis is clinical
  - CBC: eosinophilia / high IgE in serum
  - Dermoscopy can be a useful tool
  - Confocal microscopy is an expensive tool
- RX first line: albendazol PO: 400 mg/daily/3-5 days
- RX second line: ivermectin PO: 200 µg/kg/once
- Topical corticosteroids for inflammation & itch

Gnathostomiasis:

Key points
- Gnathostoma (4 species in Mexico)
- In Mexico is an emerging disease (Nayarit, Yucatan)
- *G. binucleatum*
- Eating “ceviche” (raw fish with lemon)
- Freshwater raw fish (tilapia, carp) / sushi
- Travelers’ disease / one month after trip
- Subcutaneous: most common clinical form
Gnathostomiasis

**DX & RX Pearls**
- Visceral: liver, eyes, CNS
- Biopsy: eosinophilic panniculitis
- DX: CBC (eosinophilia), ELISA
- Immunoblot: test specific L3 antigen 24 k-Da band
- Best treatment: surgery (when you find the larvae)

Semin Cutan Med Surg 2014;33:133-135

**RX pearl**

**Treatment**
- First line: albendazole PO: 400-800 mg BID/4 weeks
- Second line: ivermectin PO: 200 µg/kg/2 days
- Repeat treatment
- Oral corticosteroids

Eichelmann K, Tomecki K, Martinez JD.
Semin Cutan Med Surg 2014;33:133-135

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**Gnathostomiasis after ivermectin treatment + oral steroids**

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**Clinical cases #5**

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**Zika, Chikungunya & Dengue**

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**Zika, Chikungunya & Dengue**

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**Gnathostomiasis**

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**Going Viral 2019**

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**Zika, Chikungunya, and Dengue**

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DHF & DSS

RX pearl

- Minocycline PO, 100 mg every 12 hr/1 week
- Antiviral effect vs. all 4 serotypes
- Decreases: viral RNA synthesis, intracellular envelope protein expression, and the production of infectious virions
- Modulates host factors (ERK1/2)
- Regulates antiviral gen transcription / IFNα
- Conclusion: potential clinical use in severe dengue (DHF/DSS)


Dengue:

Clinical cases #6

Leprosy:

Key points

- M. leprae / M. lepromatosis (DLL in Mexico)
- Chronic and progressive disease (LL)
- Most common: LL (35%), BL (31%), BT (24%)
- Clinical: nodules, plaques, patches (no sensation)
- Zoonosis: armadillos (pets) in U.S. / Mexico (handle-eat them)
- DX: ZN stain, biopsy (FF), lepromin test, PCR
- RX: WHO recommendations

Martinez JD, Cardenas JA. Curr Treat Options Infect Dis 2017
DOI: 10.1007/s40506-017-0127-7
Clinical cases #7

Lobomycosis:

**Key points**
- *Lacazia loboii* (dimorphic fungus)
- Skin & subcutaneous tissue
- Traumatic inoculation, incubation 1-2 years
- Zoonosis (dolphins)
- DDX: keloids
- DX: biopsy, GG stain
- RX: surgery best treatment

**RX Pearl**

**Treatment & management**
- Surgical excision in small lesions
- Cryotherapy
- No effective systemic treatment:
  - First line: itraconazole + clofazimine
  - Second line: posaconazole
  - Combination of treatments + cryotherapy

Clinical cases #8

Noma
Noma:

**Key points**
- Cancrum oris
- Rapidly progressive polymicrobial opportunistic infection
- Orofacial gangrene
- Etiopathogenesis: extreme malnutrition, dehydration, inadequate oral hygiene
- Risk factors: children, extreme poverty, old abandoned adults
- Pathogens: *F. necrophorum*, *P. intermedia*, *P. melaninogenic*, *C. pyogenes*, *F. nucleatum*, *B. fragilis*, *P. spp.*, etc.


Noma:

**RX pearl**

**Management:**
- WHO neglected disease / bizarre entity / high mortality
- Fast & correct DX is essential
- Lesion cultures / blood cultures / antibiogram
- Antibiotics: amoxicillin + metronidazole (empirical)
- IV fluids / nutritional support
- RX: comorbidities / deficiencies
- Surgery

Am Soc Tropical Med 2017; doi:10.4269/ajtmh.16-0718

Pearls from Mexico:

**Summary**
- CL: surgery in small lesions, *itraconazole*
- Myiasis: *chimo* (tobacco)
- CLM: *albendazole* / *ivermectin*
- Gnathostomiasis: *albendazole* / *ivermectin*
- Dengue: *minocycline*
- Leprosy: zoonosis, *M. lepromatosis* (PCR)
- Lobomycosis: zoonosis, surgery for small lesions
- Noma: oral gangrene, old abandoned adults, poverty

Thank you, Merci, Obrigado, Gracias!

E-mail: jdariomtz@yahoo.com.mx