New and Emerging Therapy
Cutaneous Infectious Diseases
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Disclosure
• So62 New and Emerging Therapies
• Conflict of Interest: Consultant for Medimetriks

<table>
<thead>
<tr>
<th>DRUG</th>
<th>APPROVAL DATE</th>
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<tbody>
<tr>
<td>Crisaborole (Eucrisa®)</td>
<td>Dec 14, 2016</td>
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<tr>
<td>Dupilumab (Dupixent®)</td>
<td>Mar 28, 2017</td>
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<tr>
<td>Guselkumab (Tremfya®)</td>
<td>July 13, 2017</td>
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<tr>
<td>Brodalumab (Siliq®)</td>
<td>Feb 15, 2017</td>
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<tr>
<td>Delafloxacin (Baxdela®)</td>
<td>June 19, 2017</td>
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<tr>
<td>Benznidazole (Not branded)</td>
<td>Aug 29, 2017</td>
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<tr>
<td>Ozenoxacin (Xepi®)</td>
<td>Dec 14, 2017</td>
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<tr>
<td>Oxytetrazoleine (Rhofade®)</td>
<td>Jan 19, 2017</td>
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<td>Avelumab (Bavencio®)</td>
<td>Mar 23, 2017</td>
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<td>H2O2 40% (Eskata®)</td>
<td>Dec 17, 2017</td>
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<tr>
<td>HZ/Su Vaccine (Shingrix®)</td>
<td>Oct 20, 2017</td>
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<tr>
<td>&quot;Blue Control&quot; Device</td>
<td>July 13, 2017</td>
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<tr>
<td>dermaPACE Device</td>
<td>Dec 28, 2017</td>
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New Antibiotic: Delafloxacin (Baxdela®)
• Fluorinated quinolone
• MOA: Inhibits bacterial DNA replication
• Wide spectrum activity Gr+ and Gr- organisms
• Includes: MRSA, MSSA, Strep pyogenes, E. coli, Pseudomonas aeruginosa, Enterobacter, Klebsiella
• Approved ABSSSI in June, 2017
• Available IV (unit dose 300mg) and Oral (unit dose 450mg)

New Antibiotic: Delafloxacin (Baxdela®)
• Tested IV (300mg Q12h) or oral (450mg Q12h)
• (Oral followed 3 days IV loading dose)
• Active comparator: Vancomycin + Aztreonam
• N = 1510 in both studies combined
• Statistically non-inferior to combination
• AEs: Nausea, vomiting, diarrhea, headache, ↑LFTs
• BLACK BOX: Tendinitis and tendon rupture, Peripheral neuropathy, CNS effects


Utility?

Ozenoxacin (Xepi®): Approved 12-14-17
* Non-fluorinated quinolone
* Developed as 1% ointment for impetigo
* Dosed: BID x 5 days
* Wide spectrum activity against relevant Gram+ microbes, including MSSA, MRSA, mupirocin and ciprofloxacin resistant Staphylococci, Strep. Pyogenes
* Superior to placebo, and non-inferior retapamulin
* N=875 in two international studies, age ≥ 2 months

Why Is New Impetigo Drug Important?
* High level resistance to mupirocin reported
* Conjugative (mupA) and nonconjugative (mupB) genes in Streptococci & Staphylococci confer resistance (encode for alternate isoleucyl-tRNA synthetases)
* Mupirocin resistance is a worldwide phenomenon: recent papers from China, France, India, Chicago

Chagas Disease
* "American trypanosomiasis"
* T. cruzi
* Spread by reduviid bugs
* 10-30% risk progressive disease
* Megacolon
* Megaesophagus
* Cardiomyopathy
* Rarely dementia

Chagas Disease in USA?
* Rare indigenous cases
* 6 US Reduviid (Triatome) species
* T. gerstaeckeri, T. lecticularia, T. sanguisuga, T. indirecta, T. rubida, and T. protracta
* Survey of 1510 vectors, 54.4% harbored T. cruzi, including subtypes known to cause Chagas disease
* Texas, LA, FL, NM, AZ
**Benznidazole (No brand name)**
- Rx children 2-12 (and adults) w/ Chagas disease (acute or chronic)
- Parasitological cure better: younger age and acute disease (vrs chronic) 60-90%
- Destroys parasite DNA
- 5-8 mg/kg/d (divided doses) x60d
- 12.5 and 100mg tablets
- Peripheral neuropathy
- Bone marrow depression
- Hypersensitivity reactions

**New Zoster Vaccine (Shingrix®)**
- VZV subunit vaccine for shingles (not live attenuated)
- Glycoprotein E antigen + adjuvant
- TWO doses, IM @ 0, and then 2-6mo
- ACIP voted (8-7) to FAVOR new over existing HZ vaccine
  - Indicated for ≥ 50
  - EVEN if prior vaccine, recommend to revaccine
- 91-97% effective; ALL AGES; 4 year study (9 yr immunity)
- 88% effective reduction of PHN
- Use in HIV+ inconclusive, although appears positive

**Problem with HZ/su Vaccine**
- Risk of AE’s
- Injection site reactions
- Systemic side effects
- Either, within one week: 55-90%
- Grade 3 AE’s: 5-17%

**Emerging Therapies**
**Thermotherapy in dermatologic infections**

Chinat L. B. Stolov, MD, Sara D. Stolov, MD, and Theodore Brown, MD

The use of local hyperthermia in thermotherapy for dermatologic infections has not been fully explored in the more recent medical literature. However, we discuss the rationale behind the use of thermotherapy and review reported clinical experience with its use in the management of cutaneous infections (J Am Acad Dermatol 2018;80:989-99).

**Learning objectives:** After completing this learning activity, participants should be able to describe the potential rationale for the use of heat in dermatologic infections, identify infections that might be appropriately managed with thermotherapy, distinguish between the various forms of thermotherapy and determine which form might be the most advantageous in different clinical settings, and recognize those infections processes in which both thermotherapy and application of cold (cryotherapy) may be clinically beneficial.

**Key words:** cryotherapy, cryotherapy, cutaneous infections, dermatologic infections, infections, thermotherapy. J Am Acad Dermatol. 2018 Jun;80(6):1009-117

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**Hyperthermia and Molluscum**

- Small (n=21) Chinese prospective study
  - Patented IR heating unit (We would use heating pad)
- **44°C (111°F) for 30 minutes, Weekly x 12 weeks**
- 13 children, 8 sexually active adults (ages 21-28)
- Average # lesions = 59 (ie. Bad molluscum)
- 12/21 complete clearance 12 weeks (children and adults)
- Facial lesions more resistant
- **Message:** Thermotherapy non-invasive MC Rx

Br J Dermatol. 2017;176:809-812

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**HPV Vaccine: Therapy for Common/Planter Warts?**

**Conscious report**

Clearance of recalcitrant warts in a patient with idiopathic immune deficiency following administration of the quadrivalent human papillomavirus vaccine

S.P. Smith, E.K. Bakeandala, J. C. Stirling

First published: 10 January 2017

Acta Derm Venereol. 2015;95(8):1017-9

Louis Pasteur, 1884

“When meditating on a disease, I never think of finding a remedy for it, but instead, a means of preventing it.”

Hurricanes and Floods!

Leptospirosis: Chemoprophylaxis

- Comprehensive review and meta-analysis
- Doxycycline most widely used drug
- Single dose 200mg OR 200mg/week for 2-4 weeks
- PRE-exposure dosage significantly reduces morbidity and mortality
- POST-exposure dosage trends toward benefit but often not statistically significant

Flood coming? Take 200mg Doxycycline!

Road to my office!
Post-Exposure Bacterial Prophylaxis?

French study; MSM who have condomless sexual contact
All receiving PRE-exposure HIV prophylaxis w/ antiretroviral
Randomized: Single dose doxycycline 200mg within 24 hours versus no antibiotic within 24 hours of sexual contact (n=116 per group)
Followup: 10 months; Occurrence of chlamydia, GC, syphilis
22% presented with bacterial STD in prophylaxis group
42% presenting with bacterial STD in NO prophylaxis group (p =0.007)

Adverse GI events: 53% PEP vs. 43% NO PEP (not stat signif)


Immunogenicity and safety of one versus two doses of tetravalent dengue vaccine in healthy children aged 2-17 years in Asia and Latin America: 18-month interim data from a phase 2, randomised, placebo-controlled study


New and Emerging Therapies for Cutaneous Infectious Disease
THANKS FOR YOUR ATTENTION

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