A Pharm-illogical Approach to Managing Simple UTI in Women without Antibiotics

Us vs Urinary Bugs: Time for a Truce?

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Bacteria were discovered as the Cause of Inflammation

• In the nineteenth century men lost their fear of God and acquired a fear of microbes
  -Anonymous
Antimicrobial Agents for UTI

1936 Advertisement

Urine actually becomes germicidal

CAPROKOL (Hexylresorcinol, S. & D.) is taken by mouth and excreted by the kidneys appearing largely as a conjugate but in sufficient concentration in the free state to impart active bactericidal properties to the urine.

Hence its activity in the treatment of urinary infections.

In addition, its marked analgesic action on the urinary mucosa brings prompt ease and comfort to the patient.

SOLUTION—for children.
CAPSULES—for adults.

CAPROKOL

SHARP & DOHME
BALTIMORE :: PHILADELPHIA
The Antibiotic Era: The Golden Days

• One shot of penicillin would cure a septic patient on death’s door in the 1940’s

• New antibiotics and new classes of antibiotics were discovered very quickly (1940’s – 1970’s)

• We dosed everything with antibiotics – including our food
The Antibiotic Era: The Golden Days

Timeline of introduction of antimicrobial therapies for urinary tract infections

- 1930: Sulfanilamide
- 1940: Nitrofurantoin
- 1950: Nalidixic acid
- 1960: β-lactams (TMP/SMX)
- 1970: Ofloxacin, Ciprofloxacin (immediate-release), Norfloxacin
- 1980: Levofloxacin, Enoxacin, Lomefloxacin
- 1990: Fosfomycin
- 2000: Gatifloxacin
- 2004: Ciprofloxacin (extended-release)
With better Antibiotics came Great Predictions!

• Urinary tract infections will soon be relegated to the waste basket of medical history
  - Campbell’s Urology 1956

• The time has come to close the book on infectious diseases. We have basically wiped out infection in the United States.”
Antibiotics Sparked the Sexual Revolution
Antibiotics Sparked the Sexual Revolution

Oooh, girl, why don't you wiggle them flagella over here?

I am!
Are we entering the “Post-Antibiotic Antibiotic Era”? 

The Pharma Pipeline is drying up!

ESBL, MRSA, VRSA, CRE, MDX, XDR!!!
THE HUMAN MICROBIOME PROJECT SAYS THE HUMAN BODY HAS 100 TRILLION MICROSCOPIC LIFE FORMS LIVING IN IT.

YOU CALL THIS LIVING?
The Bladder is a Veritable Microbial Jungle
How did we manage UTI before Antibiotics?
• Blood letting
• Leeches
• Purging
• Tonics
Getting Better?
Jean Casimir Félix Guyon
Antibiotics versus placebo in the treatment of women with uncomplicated cystitis: A meta-analysis of randomized controlled trials.


• 5 RCTs
• Antibiotics superior in terms of clinical success, cure and bacterial eradication compared to placebo
• No difference in urosepsis or pyelonephritis
• Antibiotics associated with higher risk of side effects

Message – many patients responded to placebo!
So what can we actually do?

- **Besides recommending**
  - Drinking lots of water – now evidence based!
  - Rest
  - Hot Water Bottle
  - Post BM regime
  - Avoiding spermicides, douching, genital hygiene products, bubble baths etc
PREVENTION

• Options?
Probiotics: Cochrane Database Syst Rev. 2015 Dec 23;(12)


Cranberry: Cochrane Database Syst Rev. 2012 Oct 17
J Nutr. 2017 Dec;147(12):2282-2288
### Supplement Facts

<table>
<thead>
<tr>
<th>Nutrient</th>
<th>Amount Per Serving</th>
<th>% Daily Value</th>
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<tbody>
<tr>
<td>Proanthocyanidins (PAC)</td>
<td>36 mg</td>
<td>**</td>
</tr>
<tr>
<td>(from cranberry juice concentrate extract powder)</td>
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** Daily Value not established.

Other Ingredients: Hypromellose (capsule), Titanium Dioxide (color).
Vaginal Estrogen (not oral):
Cochrane Review 2008,
www.cochrane.org/CD005131
Treatment

• Options?

NSAIDS: *BMJ.* 2017 Nov 7;359:j4784
Urine Alkalization: Cochrane Database of Syst. Rev. 2016;4:No C0810745

Sodium Citrate

Sodium Bicarbonate
Methenamine Hippurate: [Cochrane Database Syst Rev.](#) 2012 Oct 17
Herbal Therapies

- Goldenseal root
- Uva Ursi
- Echinacea

National Center for Homeopathy
10 Top Natural Antibiotics

- Garlic
- Honey
- Oil of Oregano
- Turmeric
- Olive leaf extract
- Ginger

Dietary Approach
The Future?

**Uromune**: BJU Int. 2018; 121:289-292

Should we be managing simple UTI
Should we be managing simple UTI like we do the Common Cold or Flu?

Without Antibiotics!
Friend or Foe?
Presentation Pearls

• Antibiotic stewardship must be your priority
• Females with simple cystitis survived before antibiotics
• There are evidence based strategies for preventing rec UTI in females
• There may be strategies to manage acute rec UTIs in females without antibiotics
• BUT most women with rec UTIs will require episode, self start or prophylactic antibiotic management!