The UC Davis Antimicrobial Stewardship Program (ASP) was first established in pediatrics in 2011 and then hospital wide in 2013 in response to the growing challenge of antibiotic resistance. Due to increasing antibiotic resistance, patients are at a higher risk for adverse effects and poor outcomes and treatment strategies become more complex.

Antibiotics are life-saving drugs and their use has important implications for patient care and public health. With this in mind, the UC Davis Health ASP strives to ensure all patients receive optimal antibiotic therapy when indicated. We thank you for your support in putting this very important program into action.

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Asymptomatic Bacteriuria

Diagnosis

- Asymptomatic bacteriuria (ASB) is a positive urine culture in a patient with no signs or symptoms of a UTI (dysuria, frequency, urgency, fever, flank pain).
- Asymptomatic bacteriuria (ASB) is common and often associated with pyuria (urine containing ≥10 WBCs per high-powered field). Although pyuria predicts the presence of bacteriuria, in the absence of symptoms this bacteriuria is not clinically meaningful in most cases.

<table>
<thead>
<tr>
<th>Population</th>
<th>Prevalence of ASB</th>
<th>Prevalence of Pyuria in Persons With ASB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Healthy premenopausal women</td>
<td>&lt; 5%</td>
<td>32%</td>
</tr>
<tr>
<td>Women 65-90 years old</td>
<td>6-16%</td>
<td></td>
</tr>
<tr>
<td>Women &gt; 90 years old</td>
<td>22-43%</td>
<td></td>
</tr>
<tr>
<td>Diabetic women</td>
<td>9-27%</td>
<td>70%</td>
</tr>
<tr>
<td>People receiving hemodialysis</td>
<td>28%</td>
<td>90%</td>
</tr>
<tr>
<td>Female long-term care residents</td>
<td>25-50%</td>
<td>90%</td>
</tr>
<tr>
<td>Male long-term care residents</td>
<td>15-35%</td>
<td>90%</td>
</tr>
<tr>
<td>Presence of indwelling urinary catheter</td>
<td>100%</td>
<td>50-100%</td>
</tr>
</tbody>
</table>

Treatment

- Most patients with asymptomatic bacteriuria SHOULD NOT be treated.
- Treatment provides no clinical benefits and is associated only with the development of future UTIs that are antibiotic resistant.
- Exceptions: (1) pregnant patients or (2) patients about to undergo a urologic procedure.

How can I prevent unnecessary treatment of asymptomatic bacteriuria?

- Do not order “urinalysis with reflex” unless your patient has signs and symptoms of a UTI. Order “urinalysis - complete” for simple urinalysis purposes.
- Foul-smelling or cloudy urine does not indicate a UTI.
- Mental status change alone does not indicate a UTI.

References

Got GAS? Testing for Group A Strep

Q: Should testing for Group A Strep be performed for all patients prior to prescribing antibiotics for suspected bacterial pharyngitis?

A: Yes. The Infectious Diseases Society of America recommends testing all patients with suspected pharyngitis prior to treatment with antibiotics.

UC Davis Outpatient Antibiotic Stewardship Program has implemented new tools for the diagnosis and management of bacterial pharyngitis. New molecular testing can reliably identify which patients have a bacterial infection and testing children 2-18 years of age is a national quality improvement metric. Fewer than 10% of adults with suspected pharyngitis will have a bacterial etiology so testing prior to treatment can help reduce unnecessary exposure to antibiotics and subsequent complications, including C. difficile infection.

The goal of treatment of streptococcal pharyngitis is to reduce the onset of rheumatic fever in children, which is extremely rare in this country. Treatment will not reduce the chance of glomerulonephritis or other complications. To help guide your management of patients with pharyngitis, please see the figure on the next page.

Please contact Dr. Larissa May, Director of ED and Outpatient Antibiotic Stewardship, at lsmay@ucdavis.edu or Dr. Ritu Cheema, Assistant Professor of Pediatric Infectious Diseases, at ritcheema@ucdavis.edu with any questions or comments.

Meet the Stewardship Team

Dr. Scott Crabtree is our newest ASP attending physician. He comes to us from the Air Force and David Grant Medical Center where he practiced in ID and served as the ASP co-director for 5 years after completing his fellowship at Dartmouth Hitchcock Medical Center in New Hampshire. His research interests include using technology to influence clinical decision making in ways that foster appropriate antimicrobial choices. In his spare time, Dr. Crabtree enjoys traveling, being outside, and board games. He is the proud owner of a retired research beagle, Butternut.

If you see Dr. Crabtree, say hi to the newest member of the team!
**Indications for Group A Streptococcal (GAS) Testing**

- **Child ≥ 2 years and ≤ 18 years of age with a sore throat & concern for strep throat:**
  - Adults have a very low risk of bacterial pharyngitis (<10%) and antibiotics should not be given without testing first.

  - Supportive Care
    - No testing indicated

  - **Symptoms suggestive for viral etiology:**
    - Conjunctivitis
    - Coryza
    - Cough
    - Diarrhea
    - Hoarseness
    - Discrete ulcerative stomatitis
    - Viral exanthemata

  - **Are symptoms suggestive of GAS pharyngitis? Must have:**
    - Sudden onset of sore throat
    - Fever
    - Headache
    - Nausea, vomiting, abdominal pain
    - Winter and early spring presentation
    - Hx of exposure to strep pharyngitis

  - Supportive Exam:
    - Tonsillopharyngeal inflammation
    - Patchy tonsillopharyngeal exudates
    - Palatal petechiae (not pathognomonic but only supportive in the right setting)
    - Anterior cervical adenitis (tender nodes)
    - Scarletiform rash

- **Rapid Strep PCR or Throat culture (If PCR unavailable):**
  - Positive
    - Treat with antibiotics
  - Negative
    - No Treatment indicated
Test Your Knowledge

Would you like to win a $10 gift certificate to the Sunshine Café? Complete the following post-newsletter quiz and submit to uc DavisASP@gmail.com to be entered into a raffle for a free lunch!

A 63-year-old female with Type II diabetes is seen in the ED following 24 hours of nausea and vomiting after visiting with her grandchildren who had recent GI symptoms as well. She becomes slightly altered and her glucose is noted to be 523. She is hemodynamically stable and afebrile. Apart from a mild AKI the rest of her labs are otherwise unremarkable.

1. What type of urinalysis should you order to assess for glucosuria or ketonuria?
   a. Urinalysis with Reflex
   b. Urinalysis – Complete

2. True or False: Mental status changes alone are indicative of a UTI and should be treated if the urine culture grows bacteria.

3. What is the best way to prevent unnecessary treatment of asymptomatic bacteriuria?
   a. Do not order urine cultures unless your patient has signs and symptoms of a UTI
   b. Only order urine cultures in patients undergoing preoperative evaluation
   c. Only order urine cultures in women greater than 90 years old since they are most likely to have a UTI

4. When should the new “Rapid Strep A” PCR test for *Streptococcus pyogenes* be ordered?
   a. Whenever anyone complains of pharyngitis
   b. In children ages 2-18 with pharyngitis, coryza, cough, and an otherwise normal exam
   c. In children ages 2-18 with pharyngitis, vomiting, abdominal pain, and anterocervical lymphadenitis

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**ASP Gold Star Winners for November 2018**

The following staff have been recognized by the ASP team for their dedication to combatting antimicrobial resistance and commitment to the principles of antimicrobial stewardship:

- Kevin Burnham
- Katie Newell
- Payam Vali
- Maha Sami
- Priyanka Teckchandani

**Fun Microbe Fact:**

The human body contains trillions of microorganisms — outnumbering human cells by 10 to 1. However, because of their small size microorganisms make up only about 1 to 3 percent of the body's mass (in a 200-pound adult, that’s 2 to 6 pounds of bacteria)
Contact Us

The Antimicrobial Stewardship Program team members

Adult ASP Physicians:

Stuart Cohen, MD
Jay Solnick, MD
Archana Maniar, MD
Sarah Waldman, MD
Jill Ahrens, MD
Scott Crabtree, MD
Christian Sandrock, MD
Larissa May, MD

Pediatric ASP Physicians:

Natasha Nakra, MD
Jean Wiedeman, MD
Ritu Cheema, MD
Elizabeth Partridge, MD

ASP Pharmacists:

Monica Donnelley, PharmD
Nicola Clayton, PharmD
Wes Hoffmann, PharmD
Matthew Davis, PharmD

Antibiotic questions? Contact us.

See the On-Call Schedule for the ASP attending/fellow of the day

Contact the ASP Pharmacist at 916-703-4099 or Vocera "Infectious Disease Pharmacist"