

## BRINGING CLINICIANS TOGETHER TO DISCUSS CURRENT DRUG THERAPY

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### ENDOCARDITIS

You'll start to see ORAL antibiotics to treat endocarditis.

This life-threatening infection of the heart and valves is usually treated with 4 to 6 weeks of IV antibiotics.

Now early evidence suggests that switching some endocarditis patients to oral antibiotics after about 2 weeks of IV therapy may be as effective as continuing IV meds.

But there's still not much data about which PO regimen is best, whether PO meds are effective for gram-negative or resistant bugs, etc.

For now, expect oral antibiotics to be saved for patients who refuse to continue IV antibiotics...or when it's not practical to send a patient home with an IV line and frequent IV doses.

If oral meds are used for endocarditis, expect to see amoxicillin, dicloxacillin, or linezolid...each possibly with rifampin.

Ensure that these patients get high doses...such as amoxicillin or dicloxacillin 1 gram QID. Reassure that these doses seem well tolerated.

Expect PO meds to complete a total of 4 to 6 weeks of antibiotics.

Emphasize adherence. Stay alert for cost concerns...dicloxacillin or rifampin costs about \$10/day and linezolid costs over \$15/day. And consider alerting the prescriber before returning these Rxs to stock.

Tell patients to promptly report signs that antibiotics may not be working...such as fever, shortness of breath, or chest pain.

Watch for interactions. For example, adding linezolid to another serotonergic med (SSRI, etc) increases the risk of serotonin syndrome...and rifampin can reduce levels of HIV meds, oral contraceptives, etc.

Listen to *PL Voices* to hear our team discuss this with infectious diseases experts. And see our chart, *Oral Antibiotics for Endocarditis*, for more background on antibiotic choices and monitoring.

(For more on this topic, see Clinical Resource #341109 at [PharmacistsLetter.com](http://PharmacistsLetter.com).)

Primary Reference – Iversen K, Ihlemann N, Gill SU, et al. Partial oral versus intravenous antibiotic treatment of endocarditis. *N Engl J Med* 2018;August 28. doi: 10.1056/NEJMoa1808312.

See LEADER NOTES for answers to discussion questions.

## DISCUSSION QUESTIONS

### OVERVIEW OF CURRENT THERAPY

1. What is known about oral antibiotics for the treatment for infective endocarditis (IE)?

### ANALYSIS OF NEW STUDY

2. What type of study was this? How were the patients selected for inclusion?

3. How were the study groups defined?

4. How were the outcomes evaluated?

5. What were the outcomes of this trial?

See LEADER NOTES for answers to discussion questions.

6. What were the strengths and weaknesses of this trial?

7. Were the results expressed in terms we care about and can use?

#### HOW SHOULD THE NEW FINDINGS CHANGE CURRENT THERAPY?

8. Do the results change your practice? How?

#### APPLY THE NEW FINDINGS TO THE FOLLOWING CASE

M.K. is a 47-year-old male with a past medical history significant for uncontrolled HTN and end stage renal disease on dialysis. You are on the inpatient service and receive a phone call from the emergency department (ED) to admit M.K. for an unknown infection. His dialysis center sent him to the ED this morning after they discovered a temp of 101.7. He has reported some general malaise but denies any other symptoms. His vitals in the ED have been stable other than a heart rate of 113 that has returned to normal after administration of acetaminophen. Labs were significant for a WBC of 17 with a left shift, Hgb 10.2, platelets 444, Cr 4.7 with GFR 6. There were no other significant lab abnormalities. M.K. no longer makes urine, CXR was not significant for any infectious pathology, blood cultures have been drawn and are pending, rapid flu testing was negative. While reviewing his medical records in preparation for admission orders, you discover he was treated for infective endocarditis (IE) three years ago.

See [LEADER NOTES](#) for answers to discussion questions.

**9. What are risk factors for IE? Are there any specific diagnostic criteria?**

**10. What diagnostic tests might you select to evaluate for IE?**

M.K. was started on broad spectrum antibiotics while awaiting culture results. On hospital day three blood cultures returned positive for *Enterococcus faecalis*. The transthoracic echo revealed vegetations on the mitral valve with no signs of focal abscess. He is feeling better and anxious to get out of the hospital. He would like to know what the treatment plan is for him.

**11. How would you treat his IE?**

After collaboration with the infectious disease service, you switch to IV ampicillin plus IV ceftriaxone for ten days in the hospital and then transition him to an oral regimen of amoxicillin 1 gram four times daily. To ensure that the patient actually gets the oral antibiotic prescription, you provide it to him prior to discharge. He is agreeable to this plan and makes an appointment to follow up with his PCP two days after discharge.

**12. What might you suggest his PCP do for follow-up?**

See [LEADER NOTES](#) for answers to discussion questions.

## REFERENCES

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Baddour LM, Wilson WR, Bayer AS, et al. Infective endocarditis in adults: diagnosis, antimicrobial therapy, and management of complications. A scientific statement for healthcare professionals from the American Heart Association. *Circulation* 2015;132:1435-86.

Correction to: Infective endocarditis in adults: diagnosis, antimicrobial therapy, and management of complications. A scientific statement for healthcare professionals from the American Heart Association. *Circulation* 2016;134:e113.

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### **Additional Pharmacist's Letter Resources available at [PharmacistsLetter.com](http://PharmacistsLetter.com)**

Toolbox, Antimicrobial Stewardship. *Pharmacist's Letter/Prescriber's Letter*. May 2018.

Chart, Treatments for Vancomycin-Resistant Enterococcus (VRE) Infections in Adults. *Pharmacist's Letter/Prescriber's Letter*. November 2016.

Commentary, Treatment of Staphylococcus Aureus Bacteremia. *Pharmacist's Letter/Prescriber's Letter*. September 2015.

Chart, Antibiotic Therapy for Endocarditis in Adults. *Pharmacist's Letter/Prescriber's Letter*. December 2015.

Article, Help Your Endocarditis Patients Complete Appropriate IV Antibiotics at Home. *Pharmacist's Letter/Prescriber's Letter*. December 2015.

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See **LEADER NOTES** for answers to discussion questions.