

## **TREATMENT OF GROUP A STREP PHARYNGITIS**

### *Background*

Acute pharyngitis is a common condition seen in primary care, with some studies indicating that it is responsible for up to 200 of every 1000 patient visits per year. Although it can be caused by a variety of pathogens, group A streptococcus is the most common cause of bacterial pharyngitis, responsible for approximately 15-30% of cases in children and 5-10% of cases in adults. Appropriate diagnosis and subsequent antibacterial treatment have been shown to decrease the number of complications, including rheumatic fever and others.

### *Current Recommendations*

Current guidelines most recently published in *Clinical Infectious Diseases*, recommend penicillin as the agent of choice for the treatment of group A strep pharyngitis in both children and adults. Amoxicillin is an acceptable alternative to oral penicillin in young children due to a similar spectrum of coverage and better palatability. Efficacy appears to be equal and the cost is minimal with either regimen. Of note, *benzathine* penicillin G is the only antibiotic proven in controlled studies to prevent rheumatic fever and is available as a one time injection given intramuscularly; *procaine* penicillin alone is not an appropriate treatment.

### **Oral Penicillin V Dosing**

|  |  |                            |
|--|--|----------------------------|
| <u>Pediatrics</u> ‡                      | 25-50mg/kg/day div q6h for 10 days OR<br>250mg 2-3 times day for 10 days   | <u>Cost*</u><br>\$5.07     |
| <u>Adults</u><br>&<br><u>Adolescents</u> | 250mg 4 times a day for 10 days<br>OR<br>500 mg 2 times a day for 10 days† | <u>Cost</u><br>\$7.98-9.38 |

\*Cost information based on AWP.

‡Cost based on a 15kg child.

†There is current debate in the literature regarding twice daily dosing of penicillin.

If there is concern regarding patient compliance, this regimen may be warranted.

For patients allergic to penicillin antibiotics, erythromycin is the first-line alternative. Azithromycin has been recommended as an alternative to erythromycin due to better tolerability and compliance, but its high cost raises concerns. First-generation cephalosporins are also acceptable alternatives for certain penicillin-allergic patients and are associated with minimal financial burden.

Since many narrow-spectrum, low-cost alternatives to penicillin are available, the use of broad-spectrum antibiotics such as fluoroquinolones, second- or third-generation cephalosporins, or amoxicillin/clavulanic acid is unwarranted. Overuse of these agents is associated with the

development of antibiotic resistance and a significant financial burden. It has been recommended that they be reserved for more serious infections that justify their use.

### **Acceptable Alternative Regimens**

| Drug                                       | Pediatric                  |         | Adult                        |         |
|--|----------------------------|---------|------------------------------|---------|
|  | Dosage                     | Cost‡*  | Dosage                       | Cost*   |
| Benzathine penicillin G IM (one dose only) | 25,000 u/kg<br>Max 1.2mU   | \$30.90 | 1.2 mU IM                    | \$30.90 |
| Amoxicillin (10 day course)                | 20-50mg/kg div q8h         | \$9.09  | 500 mg q8h PO                | \$20.22 |
| Cephalexin (10 day course)                 | 25-50mg/kg/day div q6h     | \$19.00 | 500 mg q6h PO                | \$14.40 |
| Erythromycin (10 day course)               | Estolate: 20mg/kg div q12h | \$20.48 | Base: 500 q6h PO             | \$20.21 |
|  | Succinate 40mg/kg q12h     | \$32.57 |                              |         |
| Azithromycin (5 day course)                | 12mg/kg/day                | \$32.10 | 500 mg x1 dose then 250mg PO | \$45.48 |

\*Cost information based on AWP.

‡Cost based on a 15kg child.

### **High-Cost Regimens (Not Recommended)**

| Drug                          | Pediatric | Adult    |
|-------------------------------|-----------|----------|
|                               | Cost‡*    | Cost*    |
| Levofloxacin (Levaquin®)      | N/A       | \$101.37 |
| Cefuroxime (Ceftin®)          | \$42.29   | \$80.55  |
| Cefdinir (Omnicef®)           | \$70.36   | \$89.08  |
| Amox/Clavulanate (Augmentin®) | \$68.93   | \$101.03 |

\*Cost information based from AWP.

‡Cost based on a 15kg child.

#### *Recommendations*

Penicillin is the gold standard for the treatment of group A streptococcal pharyngitis. It is recommended by current guidelines, has been shown to provide favorable results, is associated with a minimal risk for the emergence of resistant bacterial strains, and is low in cost. For patients allergic to penicillin, erythromycin is an acceptable, cost-effective alternative. First-generation cephalosporins may also be appropriate in patients without cross-sensitivity.

#### *References*

1. Bisno AL, Gerber MA, et al: Practice Guidelines for the Diagnosis and Management of Group A Streptococcal Pharyngitis. CID 2002 July 15; 35: 113-129.
2. Bisno AL: Acute Pharyngitis. NEJM 2001 January 18; 344 (3): 205-211.
3. Gilbert DN, Moellering Jr. RC, Sande MA (Eds): The Sanford Guide to Antimicrobial Therapy (33<sup>rd</sup> edition). 2003.