GUIDE FOR HIV/AIDS CLINICAL CARE

Section 10: Resources and References

Sulfa Desensitization

URL: http://aidsetc.org/aidsetc?page=.cg-1002_sulfa_densisitization

Background

Trimethoprim-sulfamethoxazole (TMP-SMX), also known as Septra, Bactrim, and cotrimoxazole, is a key antibiotic for prophylaxis and treatment of several HIV-related illnesses. It is the most effective prophylaxis and the first-line treatment for *Pneumocystis jiroveci* pneumonia (PCP). In addition, it is effective in preventing toxoplasmosis encephalitis in severely immunocompromised patients who have evidence of previous exposure (see chapter *Opportunistic Infection Prophylaxis*), and it is effective against certain bacterial infections. TMP-SMX is quite inexpensive, which is a rarity in the field of HIV treatment. Because of its effectiveness and availability, it is used widely throughout the world. However, adverse reactions to TMP-SMX and other sulfa drugs occur in a high proportion of HIV-infected patients (roughly 25%), and such reactions may limit treatment options.

Desensitization to TMP-SMX should be considered when there are no reasonable or available alternatives and the patient has not experienced severe reactions (e.g., Stevens-Johnson syndrome or toxic epidermal necrolysis) to sulfa drugs. Several methods of desensitizing patients with previous reactions to TMP-SMX have been tried. These methods vary in starting dosage and length of dosage escalation, but success rates are around 80% in most cases and may be higher in patients with CD4 counts of <200 cells/µL.

S: Subjective

The patient reports a previous adverse reaction to sulfa drugs, such as erythema, pruritus, or rash. The patient has no history of anaphylaxis, Stevens-Johnson syndrome, or toxic epidermal necrolysis, and no reaction involving vesiculation, desquamation, ulceration, exfoliative dermatitis, etc.

O: Objective

CD4 count <200 cells/µL, or other important indication for TMP-SMX.

A: Assessment

Reaction to sulfa, possibly reversible with desensitization protocol.

P: Plan

Begin 9- to 13-day desensitization protocol, starting with pediatric oral suspension, which contains 40 mg of TMP and 200 mg of SMX per 5 mL (1 teaspoon). Gradually increase the dosage according to the protocol.

If there is any concern about the severity of a previous reaction, have the patient take the initial morning dose in the clinic so that the patient may be monitored for 3-4 hours before going home. (This assumes that emergency treatment, including IV access materials, IV fluids, epinephrine, antihistamines, and steroids, are readily available.)

Many experts recommend treatment with an antihistamine medication starting 1 day before initiation of the desensitization regimen and continuing daily until the dosage escalation is completed.

More rapid desensitization protocols are available (see "References," below) for patients urgently needing treatment with TMP-SMX.

Desensitization Regimen
Use commercially available pediatric suspension (containing TMP 8 mg and SMX 40 mg per mL [40 mg/200 mg per 5 mL]), followed by double-strength tablets, as follows:

**Table 1. Sulfa Desensitization Regimen**

<table>
<thead>
<tr>
<th>Days</th>
<th>Dosage (TMP/SMX)</th>
<th>Volume or Tablet</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-3</td>
<td>8 mg/40 mg</td>
<td>1 mL</td>
</tr>
<tr>
<td>4-6</td>
<td>16 mg/80 mg</td>
<td>2 mL</td>
</tr>
<tr>
<td>7-9</td>
<td>40 mg/200 mg</td>
<td>5 mL (or 1/2 single-strength tablet)</td>
</tr>
<tr>
<td>9-12</td>
<td>80 mg/400 mg</td>
<td>1/2 double-strength tablet (or 1 single-strength tablet)</td>
</tr>
<tr>
<td>13 and thereafter</td>
<td>160 mg/800 mg</td>
<td>1 double-strength tablet</td>
</tr>
</tbody>
</table>

**Note:** These day ranges are approximate; patients can be advanced more quickly or more slowly, depending on their reactions to the dosages.

**In the event of mild reaction:** If the patient experiences a mild reaction or itching (i.e., mild morbilliform rash without fever, systemic symptoms, or mucosal involvement), the dose can be reduced to the last tolerated step or continued at the same dosage for an additional day, while simultaneously treating the rash or reaction. Antihistamines or antipyretics may be used to treat symptoms of mild reactions. If the reaction diminishes, the patient may advance to the next dosage (consider more gradual increase of dosages); if the reaction worsens or if systemic symptoms develop, TMP-SMX should be discontinued.

**In the event of severe reaction:** The desensitization regimen should be discontinued and the patient should be treated appropriately for the reaction.

**Patient Education**

**For home desensitization regimen**

- Explain the benefits of using TMP-SMX. Be sure the patient understands and is able to follow these instructions:
  - The patient should measure the dose carefully and take it each morning, followed by a glass (6-8 oz) of water. (The patient should do a demonstration, if possible, using an oral syringe that will be used for the actual measuring at home.)
  - TMP-SMX can cause severe illness unless close attention is paid to any problems that may occur. It is extremely important for the patient to check his/her body temperature each afternoon. If the temperature is more than 100.5°F by mouth, the patient should stop taking the drug and contact the clinic. Note: If shaking chills occur, the body temperature should be checked as soon as the shaking stops, and the patient should contact the clinic.
  - If the patient develops a rash, blisters on the skin or in the mouth, or vomiting, he or she should stop taking TMP-SMX and go to the clinic or emergency room immediately. The skin should be checked each evening, and any time itching occurs.
  - If mild itching or a faint rash occurs, diphenhydramine (Benadryl) 25-50 mg PO can be taken Q4H as needed. If itching or rash persists, continue with the same dosage for an additional day; the patient should contact the clinic if there are questions or concerns.
  - The patient should contact the clinic for alternative dosage instructions in the event of persistent itching without rash.
  - Other adverse events should be reported immediately.

**For all desensitized patients**

- Desensitization may be effective only as long as the allergic individual is continuously exposed to the drug. After desensitization is complete, continue with the daily dosage. If the drug is stopped (even for a few days), the entire regimen may have to be repeated, as patients may have a recurrence of the adverse reaction.

**References**


