
Red Book[®]:

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2006 REPORT OF THE COMMITTEE ON INFECTIOUS DISEASES

Errata

(4/11/07)

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Page iv: The following individuals were omitted from the list of Collaborators:

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Page 102: The third complete sentence: **Because antimicrobial agents and the antimalarial drug mefloquine (but not chloroquine) can inhibit the growth of the vaccine strain of *S typhi*, the orally administered vaccine should be given at least 24 hours before or after administration of any of these agents** *should be omitted and replaced with Mefloquine or chloroquine may be administered simultaneously with oral Ty21a vaccine.* The Precautions and Contraindications section in *Salmonella* Infections on page 584 contains the correct information. ([See page 3 for revised text.](#))

Page 221: Under Treatment: second paragraph, third sentence: the last word should be changed from **casprofungin** to **itraconazole**. ([See page 4 for revised text.](#))

Page 250: Under Diagnostic Tests, eleventh sentence: **70°C (94°F)** *should be changed to -70°C (-94°F)*. ([See page 5 for revised text.](#))

Page 270: Under Treatment, in the third sentence, the dosage of fluconazole *should be changed from 100 mg/kg per day to 10 mg/kg per day.* ([See page 6 for revised text.](#))

Page 410: Under Chemoprophylaxis: An Alternative Method of Protecting Children Against Influenza, last sentence of first paragraph: **Zanamivir is not approved for chemoprophylaxis** *should be omitted and replaced with Zanamivir is approved for chemoprophylaxis of influenza in people 5 years of age and older.*

Table 3.28 on page 404 contains the correct information. ([See page 7 for revised text.](#))

Page 579: Under Recent administration of IG, last sentence: **Table 3.33, page 446** *should read Table 3.32, page 445.* ([See page 8 for revised text.](#))

Page 682: Under Tuberculin Testing, third paragraph, first sentence: **A TST can be administered at the same time as immunizations, including live-virus vaccines, except measles vaccine, which temporarily can suppress tuberculin reactivity** *should be omitted and replaced with A TST can be administered at the same time as inactive and live-virus vaccines, including measles vaccine.* Page 37, in Active Immunization, under Tuberculin Testing, and Page 450, in the Measles chapter, under Precautions and Indications, Tuberculosis, contain the correct information regarding administration of a TST and measles vaccine. ([See page 9 for revised text.](#))

Page 837: Under Chlamydial Ophthalmia, the third sentence: **If erythromycin or tetracycline ointment is applied to the conjunctival surface within 1 hour of delivery, the chance of developing chlamydial conjunctivitis is rare** *should be omitted and replaced with Neonatal ocular prophylaxis with silver nitrate solution or erythromycin ointment for prevention of gonococcal ophthalmia does not prevent perinatal transmission of C trachomatis from mother to infant.* Page 256, under Neonatal Chlamydial Conjunctivitis, contains the correct information. ([See page 10 for revised text.](#))

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dence in areas with poor sanitation and people who visit remote areas are at greatest risk. Two typhoid vaccines are available for civilian use in the United States: an oral vaccine containing live-attenuated *S typhi* (Ty21a strain) and a parenteral Vi capsular polysaccharide (ViCPS) vaccine. For specific recommendations, see *Salmonella* Infections (p 579). **Mefloquine or chloroquine may be administered simultaneously with oral Ty21a vaccine.** The oral vaccine capsules need to be refrigerated. Because the vaccine is not completely efficacious, typhoid immunization is not a substitute for careful selection of food and drink.

TREATMENT: Voriconazole or amphotericin B in high doses (1.0–1.5 mg/kg per day) are the drugs of choice for invasive aspergillosis (see *Drugs for Invasive and Other Serious Fungal Infections*, p 780). Voriconazole has been shown to be superior to amphotericin B in a large, randomized trial in adults. Therapy is continued for at least 12 weeks, but treatment duration should be individualized for each patient. Voriconazole is metabolized in a linear fashion in children (nonlinear in adults), so the recommended adult dosing is thought to be too low in children. The optimal pediatric dose is not yet known. Voriconazole concentrations do not correlate consistently with clinical response.

Caspofungin has been studied in salvage therapy for invasive aspergillosis with good response. The pharmacokinetics of caspofungin differ in children, in whom a body-surface area dosing scheme is preferred to a weight-based dosing regimen. Itraconazole alone is an alternative for mild to moderate cases of aspergillosis, although extensive drug interactions and poor absorption (capsular form) may limit the utility of **itraconazole**. Lipid formulations of amphotericin B can be considered, but *A terreus* is resistant to all amphotericin B products. There is no role for the use of 5-fluorocytosine or rifampin/rifabutin in treatment of invasive aspergillosis. The safety and efficacy of voriconazole, itraconazole, and caspofungin in children have not been established firmly. Studies are needed to evaluate the benefit and safety of combination antifungal therapy for invasive aspergillosis.

DIAGNOSTIC TESTS: No reliable diagnostic test to identify the organism is available commercially, and none has been approved by the US Food and Drug Administration for use in the United States. Serologic testing has been the primary laboratory means of diagnosis of *C pneumoniae* infection. The microimmunofluorescent antibody test is the most sensitive and specific serologic test for acute infection and is the only endorsed approach. A fourfold increase in immunoglobulin (Ig) G titer or an IgM titer of ≥ 16 is evidence of acute infection. Use of a single IgG titer in diagnosis of acute infection is discouraged. In primary infection, IgM antibody appears approximately 2 to 3 weeks after onset of illness, but IgG antibody may not peak until 6 to 8 weeks after onset of illness. In reinfection, IgM may not appear, and IgG increases within 1 to 2 weeks. Early antimicrobial therapy may suppress the antibody response. Past exposure is indicated by a stable IgG titer of ≥ 16 . *Chlamydophila pneumoniae* can be isolated from swab specimens obtained from the nasopharynx or oropharynx or from sputum, bronchoalveolar lavage, or tissue biopsy specimens. Specimens are placed into appropriate transport media and held at 4°C (39°F) until inoculated into cell culture; specimens that cannot be processed within 24 hours should be frozen and held at **-70°C (-94°F)**. A positive culture is confirmed by propagation of the isolate or a positive polymerase chain reaction assay result. Nasopharyngeal shedding can occur for months after acute disease. Immunohistochemistry, used to detect *C pneumoniae* in tissue specimens, requires control antibodies and tissues in addition to skill in recognizing staining artifacts to avoid false-positive results.

initial therapy for patients with meningeal and other serious cryptococcal infections. Serum flucytosine concentrations should be maintained between 40 and 60 $\mu\text{g/mL}$. Patients with meningitis should receive combination therapy for at least 2 weeks, and then fluconazole (**10 mg/kg per day**) can be used for a minimum of 10 weeks. Alternatively, the amphotericin B and flucytosine combination can be continued for 6 to 10 weeks. Lipid formulations of amphotericin B can be substituted for conventional amphotericin B in children with renal impairment. A lumbar puncture should be performed after 2 weeks of therapy. The 20% to 40% of patients in whom culture is positive at 2 weeks will require a more prolonged treatment course. When infection is refractory to systemic therapy, intrathecal or intraventricular amphotericin B may be required. Patients with less severe disease may be treated with fluconazole or itraconazole, but data on use of these drugs for children with *C neoformans* infection are limited. Another potential treatment option for HIV-infected patients with less severe disease is combination therapy with fluconazole and flucytosine; the toxicity associated with this regimen often limits its usefulness. Increased intracranial pressure frequently occurs despite microbiologic response and often is associated with clinical deterioration. Symptomatic elevation of intracranial pressure initially is managed with repeated lumbar punctures.

CHEMOPROPHYLAXIS: AN ALTERNATIVE METHOD OF PROTECTING CHILDREN AGAINST INFLUENZA. Chemoprophylaxis should not be considered a substitute for immunization in most cases. However, the currently licensed influenza antiviral drugs are important adjuncts to inactivated influenza vaccine for control and prevention of influenza disease. Amantadine and rimantadine are approved for prophylaxis of influenza A in children older than 1 year of age. Studies of prophylaxis against influenza A infection in adults have demonstrated 70% to 90% effectiveness in preventing clinical illness, but asymptomatic infection can occur. Studies in children have indicated a similar beneficial effect in diminishing spread of influenza A among institutionalized children and family members and in pediatric hospitals. The usual recommended doses of rimantadine and amantadine for prophylaxis are the same as those for treatment and are given in Table 4.9 (p 785). Most influenza A (H3N2) strains characterized by the CDC during the 2005-2006 influenza season were resistant to adamantanes, resulting in a recommendation by the CDC not to use adamantanes for prophylaxis or treatment until further notice. Oseltamivir is approved for prophylaxis in children 1 year of age and older. **Zanamivir is approved for chemoprophylaxis of influenza in people 5 years of age and older.**

- **Recent administration of IG.** Immune Globulin preparations interfere with immune response to measles vaccine, and they theoretically may interfere with the serologic response to rubella vaccine (see p 36). Rubella vaccine may be given to postpartum women at the same time as anti-Rh₀ (D) IG or after blood products are given, but these women should be tested 8 or more weeks later to determine whether they have developed an antibody response. Reimmunization may be necessary. Suggested intervals are the same as used between IG administration and measles immunization (see **Table 3.32, page 445**).

TUBERCULIN TESTING. The TST is the most common method for diagnosing LTBI in asymptomatic people. The Mantoux method consists of 5 tuberculin units of purified protein derivative (0.1 mL) injected intradermally using a 27-gauge needle and a 1.0-mL syringe into the volar aspect of the forearm. Creation of a visible wheal 6 to 10 mm in diameter is crucial to accurate testing. Other strengths of TSTs (1 or 250 tuberculin units) should not be used. Multiple puncture tests are not recommended, because they lack adequate sensitivity and specificity.

A TST should be administered to children who are at increased risk of acquiring LTBI and tuberculosis disease (see Table 3.70, p 683). Routine TST administration, including programs based at schools, child care centers, and camps that include populations at low risk, is to be discouraged because it results in either a low yield of positive results or a large proportion of false-positive results, leading to an inefficient use of health care resources. Simple questionnaires can identify children with risk factors for LTBI who then should be tested with a TST (see Table 3.71, p 684). Risk assessment for tuberculosis should be performed at first contact with a child and every 6 months thereafter for the first 2 years of life (eg, 2 weeks and 6, 12, 18, and 24 months of age). If at any time, risk of tuberculosis disease is determined, a TST should be performed, although this test is unreliable in infants younger than 3 months of age. After 2 years of age, risk assessment for tuberculosis should be performed annually, if possible.

A TST can be administered at the same time as inactive and live-virus vaccines, including measles vaccine. If tuberculin testing is indicated, measles immunization should be deferred until testing is complete or the TST should be deferred for 4 to 6 weeks. Although data are not available regarding varicella immunization, it is reasonable to assume that tuberculin testing should be deferred as with measles vaccine. Previous immunization with bacille Calmette-Guérin (BCG) vaccine is not a contraindication to TST.

Chlamydial Ophthalmia

Neonatal ophthalmia attributable to *C trachomatis*, although not as severe as gonococcal conjunctivitis, is common in the United States and should be evaluated and treated (see Chlamydial Infections, p 249). Chlamydial conjunctivitis in the neonate differs from that in adults in that in the neonate, it is characterized by lack of follicular response, mucopurulent discharge, and propensity to form membranes on the palpebral conjunctiva. **Neonatal ocular prophylaxis with silver nitrate solution or erythromycin ointment for prevention of gonococcal ophthalmia does not prevent perinatal transmission of *C trachomatis* from mother to infant.** Topical therapy does not treat pneumonia, which requires oral erythromycin therapy, which is given to newborn infants with laboratory-proven chlamydial conjunctivitis (see Chlamydial Infections, p 249).