Complete Summary

GUIDELINE TITLE

Practice guidelines for the management of patients with sporotrichosis.

BIBLIOGRAPHIC SOURCE(S)

Kauffman CA, Hajjeh R, Chapman SW. Practice guidelines for the management of patients with sporotrichosis. For the Mycoses Study Group. Infectious Diseases Society of America. Clin Infect Dis 2000 Apr;30(4):684-7. [29 references]

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SCOPE

DISEASE/CONDITION(S)

Sporotrichosis (infections with the fungus Sporothrix schenckii)

GUIDELINE CATEGORY

Management
Treatment

CLINICAL SPECIALTY

Infectious Diseases
Internal Medicine

INTENDED USERS

Physicians

GUIDELINE OBJECTIVE(S)

To provide recommendations for the treatment of various forms of sporotrichosis

TARGET POPULATION

Patients with sporotrichosis

INTERVENTIONS AND PRACTICES CONSIDERED

Treatment

1. Azoles (itraconazole, ketoconazole, fluconazole)
2. Polyenes (amphotericin B)
3. Allylamines (terbinafine)
4. Saturated solution of potassium iodide
5. Local measures (hyperthermia)

MAJOR OUTCOMES CONSIDERED

- Resolution of symptoms and signs of active infection
- Eradication of Sporothrix schenckii from tissues
- Return of function of involved organs
- Safety, tolerability, and cost of therapy

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

Not stated

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Weighting According to a Rating Scheme (Scheme Given)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Grades reflecting the quality of evidence on which recommendations are based:

I. Evidence from at least one properly randomized, controlled trial
II. Evidence from at least one well-designed clinical trial without randomization, from cohort or case-controlled analytic studies (preferably from more than

one center), from multiple time-series studies, or from dramatic results of uncontrolled experiments

III. Evidence from opinions of respected authorities based on clinical experience, descriptive studies, or reports of expert committees

METHODS USED TO ANALYZE THE EVIDENCE

Systematic Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not applicable

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Not stated

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Strength of recommendation:

A. Good evidence to support a recommendation for use
B. Moderate evidence to support a recommendation for use
C. Poor evidence to support a recommendation
D. Moderate evidence to support a recommendation against use
E. Good evidence to support a recommendation against use

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

Not stated

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

Excerpted by the National Guideline Clearinghouse (NGC)

Each recommendation includes a ranking for the strength and the quality of evidence supporting it. Definitions of the levels of evidence (I-III) and grades of

recommendation (A-E) are repeated at the end of the Major Recommendations field.

Lymphocutaneous and Cutaneous Sporotrichosis

Cutaneous sporotrichosis remains localized to the skin (fixed cutaneous or plaque sporotrichosis) and lymphocutaneous sporotrichosis involves skin, subcutaneous tissues, and regional lymphatics. Although the usual host is healthy, the infection rarely resolves spontaneously, and treatment is necessary. Several systemic antifungals and, sometimes, local hyperthermia are beneficial as treatment of this form of sporotrichosis (See Table 1 of the original guideline document for specific dosing information).

Itraconazole has become the drug of choice for treatment of lymphocutaneous sporotrichosis, with an expected success rate of 90%–100% (these findings are based on open treatment trials of 100–200 mg daily) (Kauffman, 1995; Sharkey-Mathis et al., 1993; Restrepo et al., 1986; Conti Diaz et al., 1992) (AII). Fluconazole is second-line treatment for sporotrichosis (Kauffman et al., 1996; Diaz et al., 1992). It is less effective than itraconazole and should be used at a dose of 400 mg only if the patient cannot tolerate itraconazole (BII). Ketoconazole is less effective than fluconazole and should not be used to treat sporotrichosis (Dismukes et al., 1983) (CIII).

Saturated solution of potassium iodide has been used since the early 1900s. Although the mechanism of action is unknown (Rex & Bennett, 1990), this agent was the standard treatment for lymphocutaneous sporotrichosis up until the last few years. It is inconvenient to take, and side effects, including metallic taste, salivary gland enlargement, and rash, are common. However, because saturated solution of potassium iodide is much less costly than other agents, it is still recommended. Treatment is usually initiated with 5 drops 3 times daily and is increased as tolerated to 40–50 drops 3 times daily (BIII).

Terbinafine has been used as treatment for a few patients and appears to be effective (Hull & Vismer, 1992). However, too few data are available to recommend its use until ongoing clinical trials are completed.

Although effective, treatment with amphotericin B is not recommended because of toxicity and inconvenience of administration and because lymphocutaneous sporotrichosis is a localized non–life-threatening infection. Local hyperthermia may be effective for treating fixed cutaneous lesions (Hiruma et al., 1987; Hiruma et al, 1992). This therapy entails weeks of daily applications to the lesions and requires that the patient faithfully apply heat generated by a pocket warmer, infrared or far-infrared heater, or similar device that will warm the tissue to ~ 42Â°C–43Â°C. This form of therapy should be used only rarely, such as in the case of sporotrichosis in a pregnant woman who cannot safely take any other antifungal (BIII).

Pulmonary Sporotrichosis

Most often, pulmonary sporotrichosis, an uncommon form of sporotrichosis, manifests as chronic cavitary fibronodular disease. Pulmonary sporotrichosis is most common in middle-aged men who have underlying risk factors of alcoholism

and chronic obstructive pulmonary disease (Sharkey-Mathis et al., 1993; Kauffman et al., 1996; Pluss & Opal, 1986). The outcome is poor, and patients often die of their infection, most likely because of delay in the diagnosis and the severity of the underlying pulmonary disease (Pluss & Opal, 1986). Treatment options include amphotericin B and itraconazole; the choice is dependent on the severity of the infection (See Table 1 of the original guideline document for specific dosing information).

Amphotericin B is indicated for patients with life-threatening or extensive pulmonary sporotrichosis (Pluss & Opal, 1986) (BIII). The most effective therapy appears to be a combination of amphotericin B and subsequent surgical resection (Pluss & Opal, 1986) (BIII). However, many patients are unable to tolerate such a procedure because of severe underlying pulmonary disease.

Itraconazole at a dosage of 200 mg twice daily can be used as initial therapy for patients who have non–life-threatening pulmonary sporotrichosis (Sharkey-Mathis et al., 1993) (BIII).

Saturated solution of potassium iodide, ketoconazole, and fluconazole have not proved to be effective and should not be used for treating pulmonary sporotrichosis (Kauffman et al., 1996; Pluss & Opal, 1986) (EIII).

Osteoarticular Sporotrichosis

Osteoarticular sporotrichosis is an uncommon manifestation of sporotrichosis and occurs most often in patients with underlying alcoholism. Osteoarticular sporotrichosis may involve a single joint or multiple joints or bones; isolated tenosynovitis and bursitis also occur. Osteoarticular structures are infected secondary to either local inoculation or from hematogenous spread. The outcome is poor in regard to joint function, partly because of the frequent delay in diagnosis and also because of poor host response (Sharkey-Mathis et al., 1993; Kauffman et al., 1996; Winn et al., 1993). Systemic symptoms are uncommon, and the infection is usually chronic. Therapeutic options include itraconazole and amphotericin B (See Table 1 of the original guideline document for specific dosing information).

Itraconazole at a dosage of 200 mg twice daily should be used as initial therapy for most patients, because this form of sporotrichosis is rarely accompanied by systemic illness. The rate of success of this therapy approaches 60%–80% (Sharkey-Mathis et al., 1993; Winn et al., 1993) (AII).

Amphotericin B may be indicated for treating patients with extensive involvement or for those patients for whom itraconazole therapy fails. Success rates appear to be similar to those for itraconazole, but the drug is less well tolerated (AIII). Intra-articular injection of amphotericin B has been used rarely, but there is little justification to recommend this form of therapy (DIII).

Fluconazole has been used with only very modest success in treating this form of sporotrichosis (Kauffman et al., 1996). It should be reserved for treating those patients who do not tolerate itraconazole or amphotericin B, and the minimum dosage should be 800 mg daily (BII).

Although there is 1 report to the contrary (Calhoun et al., 1991), ketoconazole has little role in the treatment of osteoarticular sporotrichosis (Sharkey-Mathis et al., 1993) (DIII). Saturated solution of potassium iodide is not effective and should not be used for treating osteoarticular sporotrichosis (EIII).

Meningeal Sporotrichosis

Meningeal sporotrichosis is one of the worst complications of infection with Sporothrix schenckii. Meningitis may be a manifestation of disseminated sporotrichosis or may occur as an isolated event. Many of the recently described patients had acquired immune deficiency syndrome (AIDS) as an underlying risk factor (Donabedian et al., 1994; Rotz et al., 1996). The diagnosis is difficult to establish, treatment options are limited, and the outcome is poor.

On the basis of a small number of anecdotal case reports, amphotericin B is the preferred treatment for meningeal sporotrichosis (Kauffman, 1995) (BIII) (See Table 1 of the original guideline document for specific dosing information).

Itraconazole may have a role, after initial therapy with amphotericin B is completed. In patients with AIDS, it is expected that meningitis will require lifelong suppressive therapy, which could be attempted with itraconazole (Bolao et al., 1994) (CIII). It is also possible that fluconazole, which achieves high cerebral spinal fluid concentrations, might be useful in circumstances in which itraconazole is not tolerated, but the antifungal activity of fluconazole against Sporothrix schenckii is less than that of itraconazole (CIII).

Disseminated Sporotrichosis and Sporotrichosis in Patients with AIDS

Disseminated infection with Sporothrix schenckii is quite unusual. Patients with AIDS appear to have an increased risk for dissemination if they develop sporotrichosis (Donabedian et al., 1994; Rotz et al., 1996; Bolao et al., 1994). The diagnosis of lymphocutaneous sporotrichosis in a patient with AIDS should spark a search for dissemination to other sites, including the central nervous system. The outcome for patients with AIDS is usually dismal, despite antifungal therapy, although a few cases of sustained remission, if not cure, have been reported (Bolao et al., 1994).

On the basis of anecdotal case reports, amphotericin B is the drug of choice for treatment (Bolao et al., 1994) (AIII) (See Table 1 of the original guideline document for specific dosing information).

Itraconazole may prove beneficial for lifelong maintenance therapy for patients with AIDS after a course of amphotericin B and can be tried as initial therapy for non–life-threatening disease in those patients who cannot tolerate amphotericin B (Bolao et al., 1994) (BIII).

There are no data supporting the use of other drugs for treating disseminated sporotrichosis.

Special Circumstances

Pregnant women with sporotrichosis should not receive azole therapy because of the teratogenetic potential of this class of drugs, nor can they be treated with saturated solution of potassium iodide because of its toxicity for the fetal thyroid (Pursley et al., 1996) (EIII). Terbinafine has not been approved for use in pregnancy. Amphotericin B can be used safely during pregnancy but should be used only for treating disseminated or pulmonary sporotrichosis. One option for cutaneous disease is local hyperthermia; another option is to wait until the pregnancy is completed and then initiate itraconazole therapy. There is no risk of the infection disseminating to the fetus, nor is sporotrichosis worsened with pregnancy; thus, there is little risk involved with delaying treatment of cutaneous or lymphocutaneous sporotrichosis.

Children with sporotrichosis can be safely treated with itraconazole. Dosages of either 100 mg daily or 5 mg/kg daily have been used for the small number of children who have been treated with itraconazole. Saturated solution of potassium iodide has also been used as treatment of children at dosages of 50 mg or 1 drop 3 times daily, up to a maximum of 500 mg or 10 drops 3 times daily.

Definitions of Strength of Recommendation and Quality of Evidence Ratings:

Quality of evidence:

I. Evidence from at least one properly randomized, controlled trial
II. Evidence from at least one well-designed clinical trial without randomization, from cohort or case-control analytic studies (preferably from more than one center), from multiple time-series studies, or from dramatic results of uncontrolled experiments
III. Evidence from opinions of respected authorities based on clinical experience, descriptive studies, or reports of expert committees

Strength of recommendation:

A. Good evidence to support a recommendation for use
B. Moderate evidence to support a recommendation for use
C. Poor evidence to support a recommendation
D. Moderate evidence to support a recommendation against use
E. Good evidence to support a recommendation against use

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

REFERENCES SUPPORTING THE RECOMMENDATIONS

References open in a new window

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The recommendations for the treatment of sporotrichosis were derived primarily from multicenter, nonrandomized treatment trials, small retrospective series, and case reports; no randomized, comparative treatment trials have been reported.

The type of supporting evidence is identified and graded for each recommendation (see "Major Recommendations").

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

The benefits of successfully treating sporotrichosis accrue primarily for the patient. Because this infection is not spread from person-to-person, public health aspects of treatment are of minor importance. Most forms of sporotrichosis are not life threatening; thus, therapy is aimed at decreasing morbidity, improving quality of life, and allowing the patient to return to occupational and familial pursuits.

POTENTIAL HARMS

Antifungal Therapy

- Conventional amphotericin B is associated with significant toxicity, including infusion-related events, such as chills, fever, headache, nausea and vomiting, and dose-limiting nephrotoxicity.
- Lipid formulations of amphotericin B, although offering several therapeutic advantages over conventional amphotericin B, are considerably more expensive, ranging from 10- to 20-fold higher in cost.
- One potential limitation of the azole antifungal drugs is the frequency of their interactions with coadministered drugs, which results in adverse clinical consequences. One type of azole-drug interaction may lead to decreased plasma concentration of the azole, related to either decreased absorption or increased metabolism of the azole. A second type of azole-drug interaction may lead to an unexpected toxicity of the coadministered drug, relating to the ability of the azoles to increase plasma concentrations of other drugs by altering hepatic metabolism via the cytochrome P-450 system.
- A second potential limitation of the azoles is the emergence of resistance of fungal organisms, especially Candida species, to fluconazole.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Getting Better

IOM DOMAIN

Effectiveness
Safety

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

Kauffman CA, Hajjeh R, Chapman SW. Practice guidelines for the management of patients with sporotrichosis. For the Mycoses Study Group. Infectious Diseases Society of America. Clin Infect Dis 2000 Apr;30(4):684-7. [29 references]

ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

2000 Apr

GUIDELINE DEVELOPER(S)

Infectious Diseases Society of America - Medical Specialty Society

SOURCE(S) OF FUNDING

Infectious Diseases Society of America (IDSA)

GUIDELINE COMMITTEE

Infectious Diseases Society of America (IDSA) Practice Guidelines Committee

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Authors: Carol A. Kauffman, Rana Hajjeh, and Stanley W. Chapman.

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

GUIDELINE STATUS

This is the current release of the guideline.

An update is not in progress at this time.

GUIDELINE AVAILABILITY

Electronic copies: Available in Portable Document Format (PDF) from the Infectious Diseases Society of America (IDSA) Web site. Also available in HTML format.

Print copies: Available from the University of Chicago Press; fax: (773) 702-6096.

AVAILABILITY OF COMPANION DOCUMENTS

The following are available:

- Kish MA. Guide to development of practice guidelines. Clinical Infectious Diseases 2001;32:851-4.
- Gross PA. Practice guidelines for infectious diseases: Rationale for a work in progress. Clin Infect Dis. 1998 May;26(5):1037-41.
- Gross PA, Barrett TL, Dellinger EP, Krause PJ, Martone WJ, McGowan JE Jr, Sweet RL, Wenzel RP. Purpose of quality standards for infectious diseases. Infectious Diseases Society of America. Clin Infect Dis 1994 Mar;18(3):421.

Electronic copies: Available from the Infectious Diseases Society of American (IDSA) Web site.

Print copies: Available from Infectious Diseases Society of America, 66 Canal Center Plaza, Suite 600, Alexandria, VA 22314.

PATIENT RESOURCES

None available

NGC STATUS

This summary was completed by ECRI on May 1, 2001. The information was verified by the guideline developer as of June 29, 2001.

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