Patient presents w/ hyper- or hypopigmented macules w/ fine scales suggestive of tinea versicolor

Do clinical presentation & microscopy confirm tinea versicolor?

No

ALTERNATIVE DIAGNOSIS

Yes

A Non-pharmacological Therapy
  • Patient education

B Pharmacotherapy
  Topical Antifungal
  Any one of the following:
  • Amorolfine
  • Butenafine
  • Ciclopirox
  • Imidazoles
  • Naftifine
  • Selenium sulfide
  • Terbinafine
  • Tolnaftate
  • Zinc pyrithione
  Oral Antifungal (consider for severe or widespread disease)
  Any one of the following:
  • Fluconazole
  • Itraconazole
  • Ketoconazole

Not all products are available or approved for above use in all countries. Specific prescribing information may be found in the latest MIMS.
Tinea Versicolor (2 of 5)

1 EVALUATION

Tinea versicolor is a common, benign superficial fungal infection localized to the stratum corneum.

Clinical Presentation
- May present as chronic or recurrent infection.
- Predominates in young adults when the sebaceous glands are the most active.
- Caused by lipophilic yeasts, Malassezia species, which are part of normal flora of human skin.
- Presents with multiple, well-demarcated macules or patches and finely scaled plaques with hypopigmentation or hyperpigmentation hence the term “versicolor.”
- Tends to be asymptomatic and is mainly a cosmetic concern but pruritus may or may not be present.
- Usually found on the upper trunk, chest, back & shoulders, & may extend toward the neck, face & arms.
- Lesions do not tan along with surrounding normal skin.

2 DIAGNOSIS

Microscopy
- Potassium hydroxide (KOH) examination of skin scrapings should confirm the diagnosis.
  - Scales or debris are examined under light microscope after adding a drop of 10-20% KOH soln.
  - Short stubby hyphae & yeast cells will appear as the typical “spaghetti & meatballs” image.
- Calcofluor may be used but this technique requires utilization of fluorescence microscope.
- Malassezia species also stain well with periodic acid-schiff (PAS) or methenamine silver.

Culture
- Unnecessary for routine diagnosis.
- Difficult to grow Malassezia in standard mycological media.

Wood’s Light Exam
- May be used to detect subclinical lesions.
- However, yellowish to white fluorescence indicative of this disease appears only in approx 1/3 of cases.

NON-PHARMACOLOGICAL THERAPY

Patient Education
- Educate patient about the basics of yeast growth.
  - Malassezia species are lipophilic; advise patient to avoid oils applied to the skin or in the bath.
  - It is neither contagious nor due to poor hygiene.
  - Avoid the use of occlusive clothing, creams, lotions & other cosmetic products.

Factors that Promote Tinea Versicolor Infection:
- High temp & high humidity.
  - Prominent in tropical & subtropical regions.
- Occlusive clothing.
- Oily skin or application of oils to skin.
- Excessive sweating.
- Immunocompromised state, malnutrition & hereditary predisposition.

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Treatment may be frustrating due to recurrence of infection in susceptible individuals. Skin discoloration may take several weeks to resolve after complete treatment. Topical agents can be very effective and are safer than systemic medications, especially in children.

**Topical Antifungals**
- Desirable properties: high efficacy, favorable adverse effects profile, fewest possible daily applications, shortest duration of therapy, low relapse rate & cost-effectiveness

**Selenium sulfide & Zinc pyrithione**
- Proven to be effective & safe; inexpensive for 1st-line therapy
- May be used as maintenance regimen (apply on the 1st and 3rd day of each month and leave on for 5 min before rinsing)

**Imidazoles**
- Highly effective, safe & fairly inexpensive

**Combined steroid/imidazole agents**
- High-potency steroid combination is not indicated for treating tinea versicolor due to the absence of significant inflammation in this condition and the potential of the steroid component to induce atrophy.

**Oral Antifungals**
- Indicated in cases of severe or widespread skin involvement, recurrent infections & failure of topical therapy.
## Dosage Guidelines

### IMIDAZOLES (TOPICAL)

<table>
<thead>
<tr>
<th>Drug</th>
<th>Available Strength</th>
<th>Dosage</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clotrimazole 1%</td>
<td>1% soln, cream</td>
<td>Apply once daily</td>
<td></td>
</tr>
<tr>
<td>Bifonazole 1%</td>
<td>soln, lotion, cream</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Econazole 1%</td>
<td>cream, spray, powd</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fenticonazole 2%</td>
<td>cream, spray</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Isoconazole 1%</td>
<td>cream</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ketoconazole 2%</td>
<td>gel, cream</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Miconazole 2%</td>
<td>soln, powd, tinct,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sertaconazole 2%</td>
<td>cream</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tioconazole 1%</td>
<td>cream</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Adverse Reactions**
- Occasional local irritation & hypersensitivity reactions, mild burning, erythema & pruritus
  
**Special Instructions**
- Treat for 2-3 wk unless otherwise stated

### OTHER ANTIFUNGALS (TOPICAL)

<table>
<thead>
<tr>
<th>Drug</th>
<th>Available Strength</th>
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</tr>
</thead>
</table>
| Ciclopirox (Ciclopfoxolamine, Ciclopirox olamine) 1.5% | led | Apply & rinse after 3-5 min, 2-3x/wk | **Adverse Reactions**
  - Erythema, pruritus, slight burning sensation
  - Contact dermatitis, burning/stinging sensation, erythema, irritation, itching
  - Pruritus, redness, burning, pain
| Amorolfine 0.25%, 0.5% | cream | Apply once daily x 2-3 wk | **Adverse Reactions**
| Butenafine 1% | cream | Apply once daily x 2-4 wk | **Adverse Reactions**

**Adverse Reactions**
- Pruritus, redness, burning, pain

All dosage recommendations are for non-pregnant & non-breastfeeding women, & non-elderly adults w/ normal renal & hepatic function unless otherwise stated.

Products listed above may not be mentioned in the disease management chart but have been placed here based on indications listed in regional manufacturers' product information.

Specific prescribing information may be found in the latest MIMS.
### Tinea Versicolor (5 of 5)

#### Dosage Guidelines

**OTHER ANTIFUNGALS (TOPICAL) (CONT’D)**

<table>
<thead>
<tr>
<th>Drug</th>
<th>Dosage</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Selenium sulfide</td>
<td>2.5% lotn, shampoo, susp</td>
<td>Apply &amp; rinse off after 5-10 min once daily x 7 days</td>
</tr>
<tr>
<td>Terbinafine</td>
<td>1% soln, cream, gel, spray</td>
<td>Apply bid x 1-2 wk</td>
</tr>
<tr>
<td>Tolnaftate</td>
<td>1% soln, cream, oint</td>
<td>Apply bid-tid x 2-3 wk</td>
</tr>
<tr>
<td>Zinc Pyrithione</td>
<td>1% liqd</td>
<td>Apply bid-tid x 2-3 wk</td>
</tr>
</tbody>
</table>

**ANTIFUNGALS (ORAL)**

<table>
<thead>
<tr>
<th>Drug</th>
<th>Dosage</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluconazole</td>
<td>50 mg PO once daily x 2-4 wk, 300 mg PO once wkly x 2 wk</td>
<td>Adverse Reactions: GI effects (eg abdominal pain, N/V, diarrhea), headache, insomnia, palpitations, pruritus, sweating, fever &amp; elevated serum transaminases</td>
</tr>
<tr>
<td>Itraconazole</td>
<td>100-200 mg PO once daily x 5-7 days</td>
<td>Adverse Reactions: GI disturbances which are dose-dependent (eg N/V, diarrhea, abdominal pain), elevation of serum transaminases, headache, dizziness, pruritus, heart failure, hepatitis &amp; jaundice if treatment &gt;1 mth</td>
</tr>
</tbody>
</table>
| Ketoconazole| 200 mg PO once daily x 7-10 days | Adverse Reactions: N/V, abdominal pain, rashes, urticaria, itching, headache.  
Rarely angioedema, paresthesia, thrombocytopenia, photophobia, dizziness, alopecia, gynecomastia, oligospermia, fatal liver damage  
- Risk of liver damage increases if given for >14 days |

All dosage recommendations are for non-pregnant & non-breastfeeding women, & non-elderly adults w/ normal renal & hepatic function unless otherwise stated.

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Please see the end of this section for reference list.
Tinea Versicolor


