DISCLOSURE OF RELATIONSHIPS WITH INDUSTRY

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U029 A Practical Approach to the Management of Onychomycosis: Diagnosis

DISCLOSURES

I do not have any relevant relationships with industry.
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Violações desta política resultarão na remoção da sessão e possível revogação do registro da reunião.

Diretores de sessão irão acompanhar de perto tais ocorrências.
Key Points

1. Confirm dx before initiating treatment
2. Currently available options for dx=KOH, culture, PAS/GMS, PCR
3. Confirmation of dx is one piece of data
4. CPC necessary
5. Evolving use of techniques for dx
1. Confirm dx before initiating treatment

- Why should we confirm dx before we Rx?
- Simulators of onychomycosis are numerous
- Traumatic onychodystrophy, tumors, etc. can all look like onychomycosis
- If test(s) are negative, then no need Rx & we save patients unnecessary $, inconvenience, drug interactions, potential drug s.e.
- Without confirmation of dx then we do not know when to stop Rx
- Recent paper disputes need for dx before treatment based on view that it is more cost effective to make clinical diagnosis, then treat
ABSTRACT
Onychomycosis is a fungal infection of the nail unit, representing the most common nail disorder and accounting for 50% of all nail diseases. Unfortunately, many patients are mismanaged, as physicians routinely treat onychomycosis empirically, falsely believing that they can make the diagnosis based on history and clinical inspection alone. We propose and provide evidence for why the diagnosis of onychomycosis should be confirmed by objective methods in each patient before initiating treatment.

Figure 1. Benign and malignant nail conditions that resemble onychomycosis clinically. (A) Onychomycosis. (B) Psoriasis. (C) Squamous cell carcinoma.
Case: Pt sent to Nail Clinic for “onychomycosis refractory to 3 months of po terbinafine”
Review of case prior to clinic visit: Dx of Onychomycosis Made on this Specimen
PAS: Spores without hyphae
Dx= Squamous Cell Carcinoma; Spores on nail plate are not onychomycosis
When to Use the Term Onychomycosis?
Septate Hyphae Within Nail Plate = Dermatophyte Onychomycosis (T. unguium)
2. Currently available options for dx: KOH, Culture, PAS

• KOH, quick, inexpensive, operator dependent
• Cultures are insensitive, approx. 50% sensitive
• PAS on formalin fixed nail plate dependent on quantity of proximal clipping, confirm what DP means when they say onychomycosis
• Dermoscopy being used to guide where to take clippings
• Take clipping of as much subungual & as far proximal as is painless
Dermoscopy Assisted Dx Onychomycosis

3 Primary Findings Attributable to Onychomycosis

1. Jagged proximal edge with spikes
2. Longitudinal striations of various colors “aurora borealis pattern”
3. Distal irregular termination aka “ruin appearance” from accumulation of debris

KOH

• KOH 10-20% with or without DMSO
• Sensitivity 80%
• Specificity 72%

PAS

- Nail clippings sent in formalin stained with PAS
- Sensitivity 92%
- Specificity 72%

Centrifugation of Formalin When Specimen is PAS Negative

- Submitted specimens 1st processed routinely (H&E, PAS)
- If PAS negative, then the formalin in which the initial specimen was submitted was processed in a standard thin-layer cell preparation system (Thermo Cytofunnel & Cytospin) & stained with PAS

My Approach

• When my physical exam proves no concern for neoplasm nor other nail disease and pt wants Rx if dx is onychomycosis, then I do KOH
• If KOH is negative then I send nail clippings in formalin to DP for PAS
• I rarely culture unless good clinical for yeast/mold or PAS is equivocal, I do not use PCR
3. Confirmation of dx is one piece of data. CPC is necessary

- Patients with underlying nail disease are at increased risk of onychomycosis
- Anything that causes nail dystrophy predisposes to onychomycosis
- Confirm using clinical exam that onychomycosis is pts only dx of concern before treating
- Dx of non-dermatophyte onychomycosis requires 1. Clinical presentation c/w onychomycosis; 2. the same non-dermatophyte cultured x 2 out of nail clippings; 3. absence of dermatophyte
- If CPC is poor then must pursue additional evaluation
4. Molecular Diagnostics: PCR

- Direct ID of dermatophyte or non-dermatophyte DNA in nail as opposed to use of morphology as in other methods
- PCR: conventional, RT-PCR, PCR-RFLP
- Vary by DNA extraction methods, targeted DNA & primers.

Development and Evaluation of a Novel Real-Time PCR for Pan-Dermatophyte Detection in Nail Specimens
Jie Gong, Menglong Ran, Xiaowen Wang, Zhe Wan, Ruoyu Li

Areas in Need of Discussion and Study

- Research in special populations such as those with chronic nail disease that makes dx of onychomycosis a more frequent & difficult problem
- Education RE: diagnosis and Rx of concomitant tinea pedis
- Patient education as to signs of onychomycosis for early dx
- Evaluation of effect of diagnosis and Rx of infection family members
- Consideration of factors affecting OM in children (*prevalence in children 0.35-5.5% compared to approx. 40% in pts >60y/o)

Key Points

1. Confirm dx before initiating treatment
2. Currently available options for dx=KOH, culture, PAS/GMS (I do KOH or PAS routinely), PCR
3. Confirmation of dx is one piece of data
4. CPC necessary (know how your dermatopathologist signs out nails, confirm pt does not have onychomycosis complicating another diagnosis like SCC or psoriasis)
5. Evolving use of techniques for dx: molecular diagnostics
Thank you! See You In NYC for Summer 2019 AAD

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