



Mycetoma: Treatment Challenges in Ethiopia

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Presentation outline

- Introduction
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Introduction #1/4

- Subcutaneous mycoses are a group of chronic fungal infections that affect the skin and underlying structures.
- The most common subcutaneous mycoses include mycetoma, chromoblastomycosis, and sporotrichosis.
- Mycetoma is a specific chronic granulomatous disease characterized by tumefaction, draining sinuses, and the presence of grains.

Introduction #2/4

- It is classified into eumycetoma caused by the fungus, and actinomycetoma caused by the bacteria.
- It has a prolonged, progressive, and indolent course. If left untreated, it ultimately leads to the destruction of deeper tissue and bone, resulting in deformity and disability.
- More prevalent in regions popularly known as the “*Mycetoma Belt*” (30° N to 15° S) and it was recognized as a NTD by the World Health Assembly in 2016.

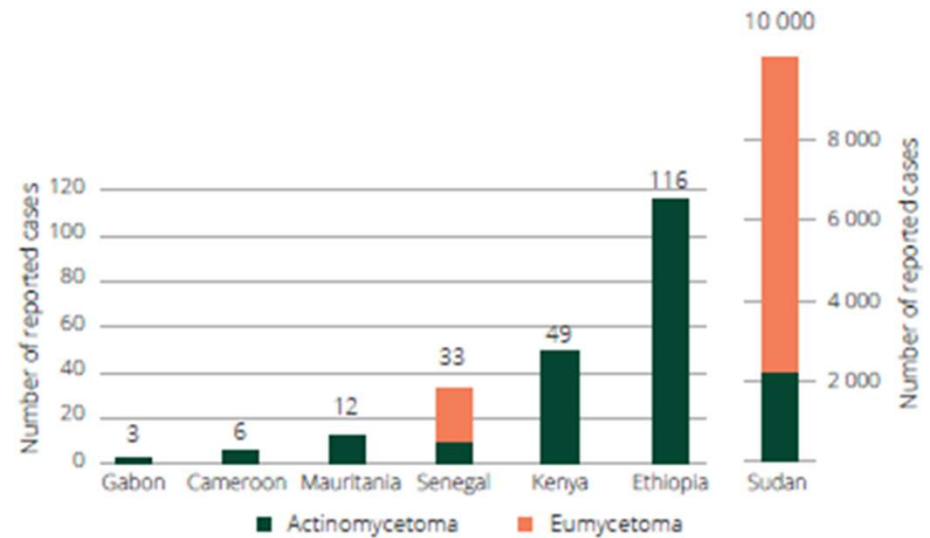
Introduction #3/4

- Ethiopia
 - 120 million population
- Amhara region
 - Second largest region in Ethiopia.
- The 2021-25 Ethiopia National NTD Strategic plan includes 12 NTDs.
 - Mycetoma was not included



Introduction #3/4

- Ethiopia has the highest number of mycetoma cases after Sudan in Sub-Saharan Africa.
- However, there is lack of data on treatment response of mycetoma patients.



Methods #1/4

- We conducted a single-center retrospective medical record analysis of all mycetoma patients (prior and new, clinical and/or biopsy-confirmed) who attended and were treated at BMH, between June 2022 and May 2024 (2 years).
 - 400 km from capital Addis Ababa
 - Est. in 1955 as Leprosarium
 - Referral and research center
 - 15 million population
 - 1 dermatologist, 1 tropical dermatology expert, 2 GPs with short-term dermatology training, and 10 nurses

Methods #2/4

- Data were collected using a clinical record form that included variables of interest, such as sociodemographic data, clinical presentation, routine investigations, treatment regimens, and outcomes.
- Charts were reviewed by the attending dermatologist.

Methods #3/4

- Serial photography of mycetoma lesions, routinely taken before, during, and after treatment for the purpose of machine learning (*VisualDx*) under the *Project Impact NTDs* was also used in this study.
- The dermatologist's assessment of clinical response, coupled with serial photography of lesions, was used to assess treatment outcome.

Methods #4/4

- Clinical cure was defined as significant decrease or disappearance of swelling, healing of sinuses tracts, and absence of grains.
- Ethical clearance was obtained from APHI-Dessei branch.
- Descriptive statistics were used to present study data. Continuous variables were presented as the number of observations, means, and ranges. Categorical variables were presented using counts and percentages.

Result #1/8

- The study included 17 patients (11 males, 6 females) with a mean age of 40 years (range 28-64 years). The majority (60%) were farmers.
- The mean duration of lesion was 5 years (range 1-12 years). The most common clinical presentation was painless foot swelling (94%). The feet were the most frequently affected site, involved in 10 patients (60%).
- A three mm punch biopsy was conducted in 13 cases, while one underwent excisional biopsy. Eumycetoma was more common (62%) than actinomycetoma.

Result #2/8

- Itraconazole was used for cases of eumycetoma confirmed by biopsy. Cotrimoxazole was used for cases of actinomycetoma confirmed by biopsy.

Combination of itraconazole and cotrimoxazole was used for cases with nonconclusive biopsy results.

- Two patients underwent debulking surgery.
- After a mean follow-up of 18 months, only three patients (17.6%) achieved a clinical cure. Two patients experienced treatment failure and required amputation.

Day 0

30/Male

Clinical

presentation

Tumefaction

Sinus tract

Discharging

black grains

Prior 7 surgeries

Biopsy

Eumycetoma



1 month

Debulking surgery

Itraconazole 200 mg

po bid

Granulating tissue

13



6 months

50-75% decrease in swelling
No visible sinus tract
No visible discharging grains

24 months

Increase in swelling
Sinus tract
Discharging grains
Osteolysis of 2nd, 3rd and 5th metatarsal and tarsal bones





Day 0

35/F

Clinical presentation

Tumefaction

Sinus tract

Discharging grain

Difficulty walking

Biopsy

Eumycetoma



12 months

Treatment

Itraconazole 200 mg po bid

Outcome

75-100% decrease in swelling

No sinus tract

No discharging grains

Able to walk

**Mycetoma lesions over
leprosy ulcer**



3 years post below knee amputation

- New lesions



Day 0

32/Male

Clinical presentation

Tumefaction

Inguinal lymphadenopathy

Biopsy

Actinomycetoma



18 months

Treatment

Cotrimoxazole/ Dapsone/ Augmentin

Outcome

25% decrease in foot swelling

50% decrease in inguinal lymphadenopathy



Conclusion

- Our study shows that the currently used therapies against mycetoma are suboptimal and unsatisfactory.
- They are characterized by low cure rates, highlighting the need for future research into more effective management strategies.

Discussion

- Advocacy and early recognition
- Capacity of health care providers
- Diagnostic gap
- Availability of drugs
- More research

References

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