Introduction and Objective. Dermatophytes are a common cause of cutaneous infections that affect a large number of healthy individuals throughout their lives. Although such infections are classically benign, they have a negative impact on the patient's physical and psychological state.

Methods. The study was conducted retrospectively. Demographic and morphological data were obtained from laboratory information systems in the Mycology Reference Laboratory in the year 2021. Dermatophytes were either isolated from clinical samples in mycology reference laboratory or sent from other laboratories for species identification. The clinical samples were divided into two parts. The first half was examined microscopically, and the second half was inoculated on Sabouraud agar media with and without cycloheximide and then incubated at 30°C for at least 2 weeks. Dermatophytes were identified by colonial morphology and microscopic characteristics.

Results. During the year 2021, 60 dermatophytes were found. The male to female ratio was 2:1. A total of 60% of patients were children. Half of the cases were isolated from foot specimens and the second half were from the skin. Only one dermatophyte was isolated from nail cultures. Regarding dermatophyte distribution, Microsporum species were the commonest and involved mostly M. audouini (26). Other less common species included two M. audouini and two M. prunorum. A total of seven other Microsporum species were not identified at species level. On the other hand, 23 Trichophyton species were found including T. erinacei, T. interdigitale, T. rubrum, T. tonsurans, T. verrucosum, and T. mentagrophytes. A total of 9 other Trichophyton species were not identified at species level.

Conclusions. Higher rates of infection were seen in males compared to females. Phenotypic identification has failed in identifying a significant number of isolates. As in other types of studies, the phenotypic examination may also result in inaccurate identification, especially among uncommon and evolving species. Hence, molecular testing is essential for accurate identification and better understanding of the epidemiology of dermatophytes-related infections. The following species were reported for the first time in Kuwait, namely: T. erinacei, T. tonsurans, and M. prunorum.
to a new investigation with biopsy for direct research and culture for fungi, being identified Protocぶichoromshan, by Mallo-
Tehr, with sensitivity to imazalil and amphotericin B. PCR amplification of the genetic material obtained in the clinical isolates was performed with purification of its product, and sequencing showed genetic similarity of 97.46% with Protocぶichoromshan. The sequence obtained was deposited in Genbank under access number MG491834. In the absence of therapeutic response to imazalil (400 mg/dl), and significant worsening of the lesion, with progression of a secondary infection caused by Staphylococcus hominis, treatment with Clindamycin (900 mg/dl for 10 days) and Liposomal Amphotericin B (4 mg/kg for 45 days) were performed. After suspension of Liposomal Amphotericin B, the lesion recurred in 15 days, and voriconazole (200 mg/day) was prescribed for 4 months, with complete regression of the lesions. Currently, he is free of injuries, having been followed up every 6 months.

Conclusion: Rare disease caused by chlorohyphal algae may be surprising due to the severity and lack of response to antifungals that show sensitivity in vitro.

P009
Molecular identification of dermatophyte species from Eastern Assam, Northeast India

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Poster session I, September 21, 2022, 12:30 PM - 1:30 PM

Objective: Dermatomycoses occur worldwide both in developing as well as developed countries. However, species of dermatophytes may vary from one part of the country to another. The present study was done to know the various species of dermatophytes that are commonly associated with infection in this part of the country.

Methods: This study was done from 2020-2021. A total of 40 consecutive isolates of dermatophytes isolated from clinically suspected cases attending Assam Medical College and Hospital, a tertiary care hospital were subjected to molecular identification by using PCR and sequencing of ITS region of the ribosomal RNA gene as well as using MALDI-TOF (VITEK MS). Samples from across ranges of lesions from skin, nail, and hair were collected and primary identification was done by culture and microscopy as well as conventional photomicroscopy. Cultures were done in Sabouraud Dextrose agar, Sabouraud Dextrose agar with chloramphenicol and cycloheximide, and dermatophyte test medium which was followed by geotaxonomic confirmation by PCR of the ITS region and sequencing of PCR amplicons using already published protocols.

Results: The species isolated were T. rubrum (36.7%), T. interdigitale (8.2%), T. mentagrophytes complex (14.2%), T. tonsurans (8%), M. gynergon (6%), T. schoenleinii (2%). The cases were clinically found to be T. corporis (44.8%), T. mentagrophytes (12.24%), T. pedis (12.24%), T. trophii (10.2%), T. aureus (8.14%), T. pinnatum (8.16%), and T. unguae (8.08%).

Conclusion: T. rubrum, T. interdigitale, T. mentagrophytes, and T. tonsurans complex were the predominant species isolated.

P100
Potent inhibition of dermatophyte fungi by Australian native jarrah honey

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Objective: Honey has been used as a remedy for multiple ailments, and the antibacterial activity of many different floral honeys has been commonly explored. The capacity of honey to inhibit fungi is much less well understood. Here we investigated the inhibition of dermatophyte species by native Australian jarrah honey.

Methods: Jarrah honey was sourced from beekeepers and commercial suppliers. Artificial honey, made from glucose (22.3%), fructose (20.7%), and sucrose (14%), was used to control for osmolality. Hydrogels prepared for production by honey was assayed using horseradish peroxidase (HRP)- based colorimetric test. Dermatophytes included Microsporum canis, M. audouini, T. rubrum, T. gypseum, Trichophyton atwadzianum, T. rubrum, and T. tonsurans. Minimum inhibitory concentration (MIC) and minimum fungicidal concentrations (MFC) for honey were assessed using CLSI methods. Fluorescent and scanning electron microscopy were used to visualize the effect of honey on fungal conidia and hyphae.

Results: Jarrah honey inhibited all of the dermatophyte species with MICs ranging from 1.5-5.3 µg/ml, and MFCs from 2-5 µg/ml. No antifungal activity was seen with the artificial honey indicating this was not due to osmolality. Micromycoses revealed that the inhibition of the production of conidia and caused hyphae to budge and collapse. While the inhibitory action of jarrah honey was greatly reduced by the addition of catalase suggesting hydrogen peroxide production was responsible for inhibition and killing, microscopy revealed hyphae were still damaged suggesting there are agents within honey that augment antifungal activity. REDOX hepatocytes failed to detect internal oxidative stress within hyphae, indicating that damaging likely occurs on the hyphal surface.

Conclusion: Jarrah honey is a non-toxic agent that may have utility in the treatment of superficial fungal infections caused by dermatophyte fungal species.

P102
Negative magnetic resonance -based identification of metabolites in dermatophytes

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Objective: Nuclear magnetic resonance (NMR) spectroscopy provides a holistic snapshot of the metabolome of an organism. There is a dearth of studies till date that have explored NMR metabolomic platform to study dermatophytes, despite its potential for rapid identification and subsequent application of the knowledge in performing faster antifungal susceptibility of dermatophytes. Here we attempted to study the frequency of various species of dermatophytes in clinically suspected cases of dermatomycoses and perform NMR-based identification of metabolites in the culture supernatant/cells of T. mentagrophytes and T. rubrum.

Method: This was a hospital-based prospective study conducted in the isolates obtained from clinically suspected cases of Dermatophytosis in the patients. Skin, nail, and hair samples of patients suspected with superficial fungal infections were processed for dermatophytes using conventional microbiological methods. NMR-based identification of metabolites was carried out in cell extracts prepared from the culture suspensions of T. mentagrophytes and T. rubrum obtained during the study from a subset of the clinical isolates from the samples. Results: Dermatophytes were isolated in 81.88% (219/270) cases, with T. mentagrophytes being isolated in 65% (143/219) of isolates, followed by T. rubrum in 31.5% (86/270) isolates. In NMR study was done in the standardized ATCC strains (T. mentagrophytes ATCC10235) and T. rubrum ATCC13702) and representative clinical isolates of both the species. Overall, 24 metabolites were identified in T. rubrum and 25 metabolites in T. mentagrophytes amongst which 22 metabolites were common to both fungi, however, 4-hydroxyproline and ‘acetate’ was found specific to T. rubrum, and ‘allantoin’ was found specific to T. mentagrophytes. These specific metabolites could be useful as early identification of dermatophytes as well as early determinants of antifungal susceptibility by using metabolic endophenotypes, further large-scale study will be helpful in the regard.

Conclusion: T. mentagrophytes was the predominant dermatophyte species in the study. Amongst the number of metabolites detected in T. rubrum and T. mentagrophytes, ‘4-hydroxyproline’ and ‘acetate’ was found specific to T. rubrum, and ‘allantoin’ was found specific to T. mentagrophytes. These specific metabolites could be useful for early identification of dermatophytes as well as early determinants of antifungal susceptibility by using metabolic endophenotypes, further large-scale study will be helpful in the regard.