PTX3 was performed by ELSA. Final covalent and gelled covalent were spotted with different serum factors and co-immobilized with protease inhibitor (4.00%), 1× PBS (pH 7.4), and protease inhibitors; MAPK 24× 37°C in heat. Culture supernatants were collected and pro-anti-inflammatory cytokines were measured by sandwich ELSA.

Results: PTX did not bind A. fumigatus covalently due to the presence of human serum, purified collagen (surfactant protein-D (SP-D) and Cig), and complement proteins (C1r). Co-immobilization of covalent with SP-D spotted on covalent with PTX significantly reduced pro-inflammatory cytokines and increased anti-inflammatory cytokines from A. fumigatus. PTX silenced the A. fumigatus covalently significantly reduced pro-inflammatory cytokine and increased anti-inflammatory cytokines from A. fumigatus (Fig. 1b).

Conclusion: PTX is a high phase protein expressed in response to pro-inflammatory strains during infection and that is increased in bronchoalveolar lavage of patients with aspergillosis. Our recent data with A. fumigatus suggest that PTX is an immunomodulatory protein that reduces pro-inflammatory response. Although an inflammatory response is necessary to fight against fungal pathogens, the tissue damage associated with enhanced inflammation can be deleterious and facilitates A. fumigatus infection.

P120

Vaccine induced protection by secreted aspartyl proteinase 2 from Candida parapsilosis in Candida tropica mediated marine systemic candidiasis: a role of B-cells and antibodies

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Poster session 1, September 14, 2021, 12:30 PM - 1:30 PM

Objectives: To study the IL-23R (Th17) and CD4+ (Th) in CD4+ T cell populations in rhino-orbital mucocutaneous patients.

Methods: The study included 20 cases of mucocutaneous and 20 healthy controls. Nasal swab, collected post-surgery was subjected to PCR analysis for the identification of the target gene. Venous blood sample 1 ml was collected in EDTA tubes from cases and controls and mixed with different anticoagulants such as CD3, CD4, CD25, and IL-23R. For analyzing the expression of Th17 and Th2 cells by flow cytometry. The assays were performed at the time of enrollment of patients and repeat blood samples were taken from each patient for staining 5 months later after treatment by OtoRhinoLaryngologists. Statistical analysis was done using SPSS software and the P value ≤ 0.05 considered as significant. All the data are expressed as the mean ± SD.

Results: All the cases were positive for KOH and confirmed for Rhizopus aureus by culture.

The flow cytometry analysis showed that the percentage of CD4+ IL-23R+ (Th17) cells was significantly high in patient before treatment compared to healthy controls and found to lower past 5 months of antifungal treatment. The percentage of CD4+ CD25+ (Th2) cells was decreased in patients (before treatment) as compared to controls and after treatment groups. The percentage positivity of CD4+ CD25+ cells was significantly increased in patients after treatment.

Conclusion: We observed significant immune imbalance, with elevated CD4+ Th17, CD25+ Th2 regulatory cells. The findings prominently indicate the mechanism of immune dysregulation in Th17 and Th2 pathways in mucocutaneous and provide evidence that restoration of Th17/Th2 may be considered as a therapeutic option for long-term benefit. Recovery of CD4+ CD25 + Th2 after treatment indicated a favorable biomarker outcome.

P121

Effect of corticosteroids on the host innate immune responses and in vitro growth characteristics during dermatophyte infection

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Poster session 1, September 14, 2021, 12:30 PM - 1:30 PM

Objective: During the current pandemic of dermatophytes, dermatologists in India are Resorting to讶ical-clinical presentations of dermatophytes. Though fixed drug combinations of topical application containing corticosteroids-antifungal antibacterial drugs are attributed to this phenomenon, it is still not clear about its exact root. Corticosteroids allium significantly decreases the growth of dermatophytes from the skin surface, which may lead to a collapse of dermatophytes. Therefore, we analyzed the effect of corticosteroids on host immune response and pathogens in vitro during dermatophyte infection.

Methodology: Patients (n = 30) were recruited in three groups. Group 1: positive cases of dermatomycosis with a history of corticosteroid usage for 30 days (Group A). A. fumigatus isolates with and without corticosteroids and expected to have normal skin (Group C). Skin biopsy samples were collected for to characterize electron microscopy (SEM) and cytokine expression study. All in vitro experiments were performed with HaCaT keratinocytes and patient A. fumigatus cell and co-cultured with Tsh-photon microscopy complex isolated from dermatomycosis (n = 4) and standard strain (n = 1, ATCC 18456). Host cells were treated with 2.5% glacial acetic acid and subcultured on brain heart agar (BHA) using flow cytometry, respectively. Growth kinetic of dermatophytes was performed for 96 h in presence and absence of corticosteroid. Expression of sulfite efflux pump gene (mtu) and RNA gene response (mtu), involved in resistance of Tsh-photon microscopy complex isolated from clinical isolates (n = 4) as well as to standard strain (n = 1, ATCC 18456) was studied by RT-PCR. All PCR results were statistically analyzed using GraphPad Prism 4 software.

Results: SEM results showed skin atrophy in skin biopsy from patients with sternal wound. Relative gene expression (2 -ΔCt) of pro-inflammatory cytokines from host biopsies was significantly reduced in IL-10, IL-18, IFN-γ, IL-12, and TNF-α (P-value < 0.05, 0.05, 0.05, 0.05, 0.04, 0.01) in standard-modified micro group. Similarly, a difference was observed in keratinocytes in vitro. According to in vitro analysis, dermatophyte monomycosis strain significantly HaCaT cells in the G2M phase (P-value < 0.04). Corticosteroid down the growth of dermatophytes in the presence of corticosteroids. A significant upregulation was observed in skin co-culture of dermatophytes with HaCaT cells as well as when culture was treated with corticosteroids as compared to the culture alone whereas significant changes were not observed with paclitaxel in similar conditions.

Conclusion: Increased atrophy caused by corticosteroids allows dermatophytes to thrive on the intact keratin at sternal wounds. An increase is reported in fungal growth and cytokine production, and sulfite synthase in keratinocytes with delayed clearance of dermatophyte infection from skin. Reduced growth of dermatophytes in the presence of corticosteroids and upregulation of sulfite synthase when co-cultured with keratinocytes and corticosteroids correlates with wound infection. In addition, increased production of sulfite non-toxic degradation leading to the formation of widespread lesions.

P122

Myeloid-derived suppressor cells as a potential biomarker and therapeutic target in rhino-orbital mucocutaneous patients

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Background: Mucormycosis is a deadly fungal infection that emerges in patients afflicted with COVID-19. All fungal illnesses are caused by dimorphic adaptive mycoses, but Myeloid-derived suppressor cells (MDSCs) have added a new dimension to the chronic inflammatory response.

Objectives: We attempted to measure the MDSC immune response in rhino-orbital mucocutaneous patients before and after treatment and compared the data with healthy control.

Methods: A total of 4 mL of blood samples were taken in an EDTA tube from 21 patients with mucocutaneous and 20 age-matched healthy control. A second blood sample was collected to examine the immune system post three months of treatment. Multicolor flow cytometry was performed on fresh blood cells harvested after surgery using K antibodies. The expression of the MDSC marker was analyzed by immunostaining with the antibodies against CD14, HLA-DR, CD31, CD11b, CD33, (Biolegend). Fluorescence microscopy was performed on flow cytometry (BD FACSCanto™ II) and analyzed by Flowjo software (BD Biosciences). The percentage of positive cells was used to express the results. The GraphPad Prism (version 8, Graphpad software, Lyddell, CA, USA) was used to analyze the data. All the results were considered significant when P < 0.05.

Results: All of the patients neutral for Rhizopus aureus, which was confirmed by the culture. The percentages of Monocyte-MDSC (mMDSC) CD14 + HLA-DR (low) cells were significantly high in patients compared to healthy control. In pre-and-treatment, the percentages of MDSCs were found significantly low and comparable with healthy control. Granulocytes, MDSCs (mMDSC HS-DR-low CD31 + CD11b + CD66+) cell population was higher in patients compared with healthy control and patients with post-Thromboprophylaxis. Conclusion: MDSC regulates T cells and other immune cells with a different mode of action. This finding in this study immunologically reduces the mechanism of immune dysregulation involving MDSC pathway in mucocutaneous and provides evidence that normalization of immune balance can inhibit MDSCs may be considered a therapeutic option for long-term benefit.