279. Evaluation of β-D-Glucan Utilization in Thailand: Single Academic Center Experience

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Background. β-D-glucan (BG) detection was first available in Thailand in 2016 to aid diagnosis of invasive fungal infections (IFIs). Given a paucity of real-world experience of BG use in resource-limited countries, this study was conducted to describe appropriateness of BG testing and sequelae of BG results.

Methods. A retrospective study included all patients with at least 1 BG ordered at King Chulalongkorn Memorial Hospital, Bangkok, Thailand during March 2016 to December 2018. Descriptive statistics were used.

Results. 83 patients were tested by BG assay (Fungitell, Associates of Cape Cod, Inc.): 6 with hematopoietic stem cell transplant, 12 with solid-organ transplant, 20 with active cancer receiving chemotherapy, 34 receiving high dose steroids (≥20 mg/day of prednisone for ≥3 weeks) and 11 with other conditions. Seventy-three patients were tested under infectious disease (ID) service's recommendations. There were 13 and 20 cases of proven and probable IFIs, respectively. Among 13 proven IFIs, there were 11 positive, 1 indeterminate and 1 negative (mucormycosis) BG results. Among 49 cases with positive BG results, 24 were determined to be false-positive results. Median turnaround time for BG results was 16 (IQR: 9–23) days. Due to high turn-around time, only 8 patients were started on antifungal agent(s) and 3 underwent bronchoscopy due to positive BG results. All proven IFI cases were started on antifungal treatment prior to BG availability.

Conclusion. Approximately 87% of BG use in Thailand was ordered in patients with risk factors for IFIs. This could be due to majority of BG test was recommended by ID specialist. Despite being used in right clinical context, 49% had false-positive BG results. Another barrier of BG use in Thailand was high turn-around time due to small numbers of BG ordered and relative high cost to run the assay. Therefore, the utility of BG for aiding diagnosis or management of fungal infection in our setting is limited.

Disclosures. **All authors:** No reported disclosures.

280. Monitoring Serum Erythrocyte Sedimentation Rate (ESR) and C-Reactive Protein (CRP) in Correlation with (1–3)-β-D-Glucan Levels in Vascular Pythiosis: A Preliminary Study

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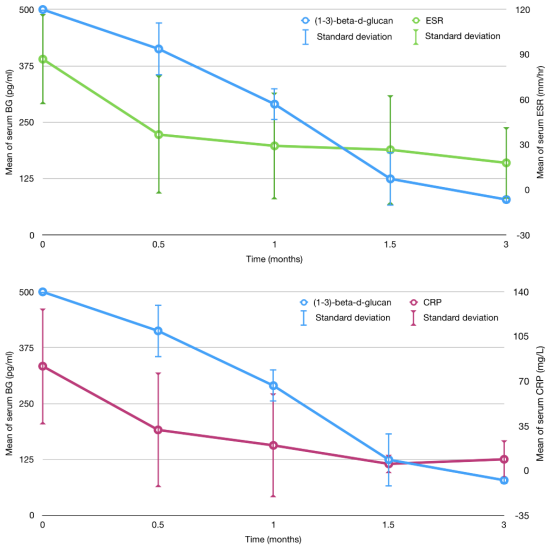
Background. Vascular pythiosis, caused by *Pythium insidiosum*, is a life-threatening disease despite aggressive treatment. Our recent study showed that serum β-D-glucan (BG) trends can be used to monitor disease activity after treatment initiation. A significant decline in BG by 0.5 month indicated complete resection without residual disease. However, BG assay is cost probihitive and available only at King Chulalongkorn Memorial Hospital in Thailand. This study was conducted to preliminarily evaluate erythrocyte sedimentation rate (ESR) and C-reactive protein (CRP) as monitoring tools.

Methods. A prospective study included proven vascular pythiosis patients receiving treatment with combination therapy from November 2018 to January 2019. Clinical information, BG, ESR, and CRP were collected at 0, 0.5, 1.5, and 3 months post diagnosis. Spearman's correlation coefficient and analysis of response profiles were used.

Results. Six patients were enrolled. All had thalassemia. Four developed disease at popliteal artery, 1 at common iliac artery, and 1 at brachial artery. All underwent amputation with negative surgical margins achievement. All received itraconazole, azithromycin, and *P. insidiosum* immunotherapy. One received terbinafine and one received doxycycline additionally. All had positive BG > 500 pg/mL at diagnosis. After treatment initiation, means of ESR were significantly decreased at 0.5 months ($P = 0.02$). Means of CRP were not significantly changed until 1 month ($P = 0.02$) (Figure 1a and b). Correlation coefficients between BG and ESR vs. BG and CRP were 0.74 and 0.65, respectively. All survived without relapse at 3 months.

Conclusion. ESR and CRP are potentially valuable markers to monitor vascular pythiosis in resource-limited countries. However, ESR levels and trends seem to be correlated with BG better than CRP. Further studies are needed to enroll more patients, especially patients with incomplete resection or non-surgical candidates.



Disclosures. **All authors:** No reported disclosures.

281. Hypersensitivity Pneumonitis Diagnosed with Broad-Range PCR Testing after Exposure to Battarrea Mushroom Spores

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Background. *Battarrea* puffball mushrooms are found extensively worldwide and contain spore-containing sacs. Inhalation of the spores of similar mushrooms, such as *Lycoperdon*, have been implicated in cases of lycoperdonosis—a syndrome of hypersensitivity pneumonitis. We report a case of hypersensitivity pneumonitis confirmed to be secondary to *Battarrea* spore exposure diagnosed by broad-range PCR.

Methods. A 23-year-old homeless man with a history of methamphetamine use presented to the emergency department with a 2-week history of fevers, chills, productive cough, and malaise. He reported his symptoms began soon after eating a long-stemmed mushroom he found growing next to a building. He reported inhaling particles from the mushroom when he picked it up prior to eating it. He vomited within 1 hour of ingestion, and then had a worsening progression of cough and malaise over the following 2 weeks. In the emergency department, he was noted to have leukocytosis and mild elevation of transaminases. He required supplemental oxygen due to hypoxemia. CT scan of his chest demonstrated extensive bilateral nodular pulmonary infiltrates. He was admitted and started on treatment for community-acquired pneumonia. Over the next several days, he had worsening respiratory failure, and routine work up for infectious etiologies was unrevealing. To further investigate, bronchoscopy and bronchoalveolar lavage (BAL) was performed and routine bacterial, fungal and mycobacterial cultures and cytology with Gomori Methanamine-silver and acid-fast stains were negative. BAL fluid was sent for broad range DNA testing by PCR. Antibiotic therapy was stopped, and he was started on steroids to treat presumed hypersensitivity pneumonitis. He recovered rapidly and was discharged on a course of oral corticosteroids.

Results. After the patient was discharged, molecular testing of BAL fluid resulted with detection of *Battarrea* species DNA using 28s and ITS primer sets. DNA from no other pathogens was detected.

Conclusion. Identified through broad range DNA PCR testing, exposure to *Battarrea* mushroom spores may be a previously unreported cause of hypersensitivity pneumonitis. PCR testing should be considered in the workup of hypersensitivity pneumonitis with known or suspected exposure to mushroom spores.