Changes of NF-κB and apoptosis-related genes signaling pathway in experimental hepatic fibrosis

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Background: Chronic liver injury is caused by a variety of injuries, including viral hepatitis, alcoholic drug abuse, and autoimmune hepatitis. Liver fibrosis is a process of chronic liver injuries, characterized by increased synthesis and decreased degradation of extracellular matrix (ECM), ECM deposition in the liver and altered the normal liver architecture and function. The present study aims the changes of liver tissue NF-κB pathway and apoptosis-related genes in experimental mice hepatic fibrosis.

Methods: C57BL6/J mice were divided into model group and control group, two group mice were injected with CCL₄ or Sodium Chloride for 8 weeks to induce hepatic fibrosis. Blood and liver tissue was harvested from the mice. The expression of α-SMA, NF-κB/IκBp65 and apoptosis-related genes caspases3, Bcl-2/Bax in liver tissue was measured by immunohistochemistry and RT-PCR assay. Serum ALT and HA were measured.

Result: CCL₄ induced hepatic fibrosis models showed increased serum ALT and HA levels, and progressive hepatic injury including inflammatory infiltration and fibrosis, which associated with enhanced α-SMA, NF-κB, IκBp65 protein and gene expression. Apoptosis-related gene bax expression was increased, bcl-2 expression was decreased, caspases3 protein and gene expression were up-regulated. These effects were associated with repressed hepatic HSC activation.

Conclusion: Our results demonstrate that NF-κB/IκB signal pathway and apoptosis-related genes caspases3, bcl-2/bax play a critical role in the progression of hepatic fibrosis. It could be useful targets for fibrosis therapy.

Poster Session – Fungal Infections

PP-061 Isolated cerebral mucormycosis refractory to amphotericin B with good response to posaconazole

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Introduction: Mucormycosis is a rare opportunistic infection, usually associated with immunocompromised states. Several conditions such as hematologic malignancy, solid organ transplantation, diabetes mellitus, corticosteroid therapy, or chemotherapy predispose patients to infection. It can produce an aggressive and sometimes fatal infection. Cerebral mucormycosis is an acute life-threatening disease. Early infiltration of the infectious agent into the central nervous system may result in septic thrombosis of the cavernous sinus, mycotic meningoencephalitis, brain infarctions as well as intracerebral and subarachnoidal hemorrhages.

Case Description: The patient was a 46-year-old woman known case of diabetes mellitus with chief complaint of headache, fever and swelling of right posterior auricular area with erythema and hotness. Brain CT scan was performed that showed a brain abscess in right temporoparietal lobe. Smear of drained abscess showed broad nonseptated hyphae and culture result was mucoral agent. Amphotericin B was started. Despite several days after amphotericin B infusion, fever continued and ESR did not change. Amphotericin B was discontinued and posaconazole was started. Fever disappeared and ESR decreased and the patient was discharged with good general condition. Isolated cerebral mucormycosis is a rare and life threatening presentation of mucormycosis. Resistance to amphotericin B is increasing in mucoral agents. Mucormycosis has a good response to posaconazole.

PP-062 Mucormycosis: clinical manifestation, diagnosis and management – study of nine cases

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Objectives: Mucormycosis is an aggressive fungal disease that involves the paranasal sinuses, orbit, central nervous system and other organs. This infection usually occurs secondary to immune suppression, diabetic ketoacidosis, and prolonged use of antibiotics, steroids, and cytotoxic drugs. Management of the condition consists of treatment of the underlying disease and surgical debridement combined with intravenous antifungal agents.

Methods: In a retrospective study we evaluated nine cases of mucormycosis in several tertiary care hospitals in Iran during several years. Clinical manifestations, diagnosis including laboratory and radiologic study, management including surgical and medical interventions were evaluated.

Results: In this study there were six cases of rhinocerebral mucormycosis, one case of pulmonary mucormycosis, one case of pelvic mucormycosis and one case of isolated cerebral mucormycosis. Risk factor for most of our patients was diabetes mellitus. We use amphotericin B and posaconazole as medical therapy. Surgical intervention and radical debridement was performed for all of patients. Five cases (55.5%) of our patients survived. The patients that
explore were those who developed cerebritis, meningitis or brain abscess.

**Conclusion:** Mucormycosis is a rare but usually fatal fungal infection. High index of suspicion, early diagnosis, and combination treatment with antifungal agents and surgical debridement may improve the prognosis of this serious infection. Resistance to amphotericin B is increasing in mucoral agents. Mucormycosis has a good response to posaconazole.

**PP-063** Etiological spectrum of fungal infections in immunodepressed patients from Timis County, Romania

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**Background:** The morbidity and mortality rates are significantly increased in immunodepressed patients as a result of severe fungal infections. The present study aimed to conduct a retrospective investigation of the etiology of fungal infections in a group of immunodepressed patients.

**Methods:** The authors have retrospectively analyzed the hospital records of 79 immunodepressed patients (44 males, 35 females) admitted at the Department of Infectious Diseases from Timisoara. The positive diagnosis was established based on physical examination (fever, weight loss, white depots on tongue, headache, anorexia, asthenia) and laboratory data (leukocyte count, erythrocyte sedimentation rate, C reactive protein, titre of antistreptolysin O antibodies, electrophoresis, blood culture, sputum culture, ELISA, Western blot, glossal exudate and CHROM-AGAR or Sabouraud medium culture). The identification has been made by API Candida system, ATB Fungus 2 system testing for antifungal sensibility and direct microscopy examination of fungal specimens. The data obtained was statistically processed with EpiInfo v.6 program.

**Results:** The study group was distributed as follows: 16 patients had diabetes mellitus, 24 had chronic hepatitis, 12 had liver cirrhosis, 12 had hematological malignancies, 6 had pulmonary tuberculosis, 5 had breast cancer and 4 had pulmonary cancer. Fungal infections were diagnosed in 65 patients (82.27%): 50 patients (76.92%) presented glossal candidiasis, 12 (15.84%) had oropharyngeal candidiasis, and 3 (4.61%) had esophageal candidiasis. There have been isolated 40 strains of Candida albicans and 25 strains of Candida non-albicans (p = 0.03) among which 10 strains of Candida glabrata, 9 strains of Candida kefiri and 6 strains of Candida parapsilosis. Out of the 40 strains of Candida albicans, 26 were resistant to fluconazole (p = 0.04) but all were sensitive to itraconazole.

**Conclusion:** The knowledge of the etiological spectrum of fungal infections in immunocompromised patients allows the proper implementation of the antifungal treatment and prophylaxis measures thus leading to satisfying results.

**PP-064** Cutaneous zygomycosis of the scalp: a case report and review of the literature

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**Background:** The incidence of the life-threatening invasive fungal infection, Zygomycosis, has been increasing over the past two decades. Cutaneous Zygomycosis represents the third most common type, following Rhinocerebral and Pulmonary forms. It can be superficial, invasive or disseminated. Primary and isolated Scalp involvement is very rare.

**Method:** We report a case of scalp Zygomycosis in a diabetic patient presented with large eschar. He was treated by surgical excision, skin graft and antifungal therapy using Amphotericin B lipid complex for one month followed by Posaconazole for three months.

**Results:** He was successively cured with no evidence of recurrence for one year.

**Conclusion:** Cutaneous Zygomycosis requires high index of clinical suspicion for timely diagnosis through early skin biopsy for histopathology and culture particularly if there is a skin necrosis. Treatment consists of combination of prompt surgical intervention and antifungal therapy.

**PP-065** Establishment and analysis of murine model of invasive pulmonary aspergillosis

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**Aim:** To establish a murine model of invasive pulmonary aspergillosis and to analyze its research value.

**Methods:** Mice were immunosuppressed with cyclophosphamide by intraperitoneal injections and in the process routine blood test were monitored. Invasive pulmonary aspergillosis was induced by inoculation of Aspergillus fumigatus spore suspension with self-made tracheal intubation. Mice were sacrificed on day 1, 3, 5, 7 after inoculation and their lung tissues were cultured and histopathologically analyzed.

**Results:** Mice shows a loss of weight and depression after a series of different dose of cyclophosphamide injection. Routine blood test shows a significant decrease of white blood cells. Lymphocytes and lymphocytes can’t be distinguished. By observing pathological slices, we can see lung tissue lesion aggrates gradually after inoculation. Haemorrhage and cellulose exsudation is obviously seen; sporus agregat and germinate. As a result, alveoli are destroyed diffusely and a large area of lung edema happened.

**Conclusions:** A murine model of invasive pulmonary aspergillosis is succesfully established, which will be a reference of further studies of aspergillosis pathogenesis and pathophysiology, in addition to antifungal agent pharmacodynamics.

**PP-066** A case of mucormycosis in a diabetic patient

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**Mucormycosis** – invasive fungal infection affecting any organ. Over 50% of cases are rhinocerebral involvement requiring emergent, aggressive, disfiguring facial surgery. Mucormycosis affects immunocompromised patients or those with metabolic abnormalities.

51yo woman presented with lethargy, decreased PO intake for 5 days. PMH: DM, HTN (both non-compliant), CVA, PE, DVT, IVC filter. Patient underwent procedure for dental abscess in right maxilla 5 days before admission, was on amoxicillin, denied recent fevers, chills. She hasn’t been taking insulin for unknown time.

On examination: right-sided facial swelling, numbness, right eye closed with surrounding erythema, proptosis, diplopia, decreased visual acuity. Nasal mucosa didn’t reveal black turbinates.

Poster Presentations, Poster Session – Fungal Infections S563