clinical manifestation, antibiotic susceptibility and treatment.

Methods: A retrospective study was conducted during the period January 2007—Febrary 2008 to detected CA-MRSA isolated from samples of SSTI obtained from HIV positive patients attended at the ambulatory care Infectious Diseases Unit at Fernandez Hospital in Buenos Aires, Argentina. We registered 13 positive samples but 2 were excluded from the analysis because of hospitalization during the previous 6 month. Epidemiological features, clinical manifestation, antibiotic susceptibility, treatment and outcome were evaluated.

Results: $n = 11$, F/M 4/7, median age = 37yrs (r19—49), heterosexual 27%, MSM 27%, IDU 27%. Median CD4 count 258 cell/mm^3 (r10—382), 5 were on HAART. Clinical manifestation: furunculosis 73%, folliculitis 18% and cellulitis 9%. During the previous 6 month to the episode: 6 had received ATB (4 beta-lactams and 2 TMP/SMX). The antibiogram showed: macrolide resistance 54% and clindamycin resistance 18%. No rifampicin, ciprofloxacin or TMP/SMX resistance was detected. The empirical treatment was inadequate in 70%; median of treatment duration 8 days (r7—14). None of the patients required surgical drainage and the outcome was favorable in all of them.

Conclusion: CA-MRSA must be considered a possible etiology of SSTI in this population; especially in patients with furunculosis witch was the most frequent clinical manifestation. We detected 18% of clindamycin resistance and the absence of TMP/SMX, ciprofloxacin or rifampicin resistance. The active surveillance of methicillin associated resistance is important to guide the adequate empirical antibiotic therapy in patients with possible CA-MRSA lesion.

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40.097

CPAP Protocol Reduces Intubation and Mortality of Pneumonia Patients in Resource-Limited Settings

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Background: Pneumonia is a leading cause of mortality in the developing world. Many recent studies have suggested that low-cost and minimally invasive interventions are critical in reducing mortality in severely ill infants and children in resource-limited settings. We hypothesize that CPAP, used aggressively, will decrease intubations and improve the mortality of patients diagnosed with severe pneumonia who are admitted to the intensive care unit (ICU) of Angkor Hospital for Children (AHC) in Cambodia.

Methods: AHC's ICU patient log book was reviewed for the year 2005 and all patients were placed in a database according to diagnosis, intubation, and mortality. The available evidence was reviewed and an evidence-based protocol for CPAP was developed by the local Cambodian staff. The protocol was implemented in January 2006 and data was collected prospectively on diagnosis, intubation, CPAP use, and mortality for the year 2006.

Results: In 2005 and 2006, 101 and 151 patients were admitted respectively with a primary and sole diagnosis of pneumonia. In 2006 compared to 2005, intubations among these patients decreased by 47% and mortality decreased by 77%.

Conclusion: Early intervention with a minimally invasive, low-cost, evidence based CPAP protocol reduces intubation and improves mortality in patients with pneumonia presenting to a children's hospital in a resource-limited setting.

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HIV/AIDS - Immunology, Virology and Diagnostics (Poster Presentation)

41.001

HIV-1 Induces Apoptosis in Primary Osteoblasts and HOBIT Cells through TNF-alfa Activation

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Background of the study: Several HIV-1 infected patients show bone loss and osteopenia/osteoporosis during the course of disease. The mechanisms underlying this degenerative process are largely unsettled and the relationship between HIV-1 and osteoblasts/osteoclasts cross-talk regulation has not been yet investigated. The aim of our study is focused on analysis of biological effects of HIV-1 on osteoblasts and osteoblast-like HOBIT cells to determine the mechanisms involved in the bone loss in the course of HIV-1 infection.

Methods used: Human hipbone osteoblasts of patients were obtained from commercial sources or isolated from HIV-1 negative patients enrolled after giving their informed consent. HIV-1 DNA was determined by PCR whereas RT-PCR was employed to determine viral RNA, cell membrane markers and TNF-alfa mRNA.

Results: proviral HIV-1 PCR analysis showed that primary osteoblasts and HOBIT osteoblast-like cell line are not susceptible to infection. On the other hand, HIV-1, heat-inactivated HIV-1 and HIV-1 gp120 treatment induced a significant apoptotic process activation at 72—96 hours that is tackled by soluble CD4 treatment suggesting an interaction between gp120 and cell membrane proteins.

Although the CD4 and CXR4 mRNA was costantly detectable in both the cell models, CD4 and CXR4 proteins are expressed at very low density in a low percentage of cells (4—6% and 4% respectively) whereas CCR5 is significantly more expressed. HIV-1, heat-inactivated HIV-1 and HIV-1 gp120 treatment induced both the TNF-alfa mRNA and supernatant protein increase at 24—96 hours. Moreover, anti-TNF-alfa pretratment tackles the apoptosis induction suggesting a direct role of

TNF-alfa in the HIV-1 related activation of apoptotic process.

Conclusions: These results indicate that HIV-1 triggers apoptosis in osteoblasts and HOBIT cells through the gp120 interaction with cell membrane and TNF-alfa induction suggesting a novel mechanism in the HIV-1 related impairment of the bone mass structure homeostasis.

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41.002

Effect of Steriods on TNF-Alpha Expression in Whole Blood Cell Cultures of Individuals with Human Immunodeficiency Virus Infection

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Objective: To compare the Tumor Necrosis Factor-alpha (TNF-α) levels in HIV infected and uninfected healthy individuals and to evaluate TNF-α release in the presence of Vitamin D3, EB 1089 and methyl prednisolone in whole blood cell cultures of HIV infected and uninfected individuals.

Methods: Plasma TNF-α estimation: Blood was collected from healthy blood donors ($n = 66$) & HIV infected patients ($n = 71$) after their consent. Plasma was separated and stored at -700C till TNF-α levels were measured.

Whole Blood cell assay: TNF-α release was evaluated in whole blood cell cultures of HIV infected ($n = 13$) and uninfected individuals ($n = 7$) with and without modulators such as Phytohaemagglutin (PHA) and Concanavalin-A (Con-A); Methylprednisolone sodium succinate, Vitamin D3 and EB1089 all of which have a potential affect on TNF-α release.

Cytokine assay: The TNF-α levels were estimated by sandwich ELISA using R& D systems kit.

Results: There was a wide range of values of TNF-α levels in individuals of both uninfected and HIV infected groups. There was a significant decrease in the plasma TNF-α levels in HIV infected as compared to uninfected group. Stimulation of whole blood cell cultures by Con A & PHA did not show significant differences in the TNF-α release between uninfected and HIV infected individuals. When stimulated whole blood cultures were incubated in the presence of methylprednisolone, vitamin D3 and EB 1089, only methylprednisolone showed significant difference in the inhibition pattern as compared to others.

Conclusion: There is a wide scatter of individual plasma TNF-α values in patients & normal individuals. TNF-α release in the whole blood assays of normal & HIV patients also showed a wide variation. Methylprednisolone exerted maximum inhibition in TNF-α release as compared to other modulators. Clinical follow up and longitudinal studies on TNF-α levels in patients could indicate its role in the progression of HIV to AIDS.

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41.003

A Prospective Study on Immune Restoration Disease in HIV-Infected Patients Following Successful ART at UMMC

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Approximately 10—40% of HIV-infected patients responding to antiretroviral therapy (ART) develop immune restoration disease (IRD). It is thought that patients experience clinical deterioration as a result of an inflammatory response to intact subclinical pathogens and/or residual antigens.

Objective: To determine the incidence and risk factors for the development of IRD in a cohort of severely immunosuppressed patients during successful treatment with ART (triple therapy) at the UMMC clinic.

Methods: Patients were monitored and clinical data characterized at weeks 0, 6, 12, 24 and 48 of ART from 47 patients with age, gender, ethnicity, CD4 T-cell count and percentage, and plasma HIV RNA.

Results: The incidence of IRD in our cohort was 27.7%, and the commonest IRD event was an exacerbation of symptoms (cervical lymphadenitis, lymphadenopathy and lymph nodes evolving into abscesses or cold abscess enlargement) associated with pre-existing infections with Mycobacterium tuberculosis (MTb). Having a low baseline CD4 T-cell count and percentage was a risk factor for developing IRD. TB IRD occurred in patients who started ART within 6 weeks of TB treatment.

Conclusion: Patients with advanced disease initiating ART must be closely monitored in the first 6 months for development of IRD. In areas where MTB is endemic, TB IRD may occur frequently and lead to diagnostic and therapeutic challenges.

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41.004

Immunological Profiles of Immune Restoration Disease Presenting as Mmycobacterial Lymphadenitis or Cryptococcal Meningitis

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Objectives: A proportion of HIV patients beginning antiretroviral therapy (ART) develop immune restoration disease (IRD). Immunological characteristics of IRD were