

Type: Poster Presentation

Final Abstract Number: 41.003

Session: *Epidemiology and Public Health I*

Date: Thursday, April 3, 2014

Time: 12:45–14:15

Room: Ballroom

Bloodstream infections among children living in rural settings in Uganda and predictors of mortality outcome

J. Suvada¹, P. Tumbu², R. Iriso², H.N. Russel³, E. Namagala⁴, P. Kawanguzi⁵, C. Kiyaga⁶, Z. Akol⁴, G. Mikolasova⁷, J. Sokolova⁸, N. Kulkova⁹, B. Silharova^{10,*}, M. Bartosova¹⁰, M. Meciakova¹⁰, J. Namonyo¹¹

¹ Health Initiatives Association, Buikwe, Uganda² Baylor' College of Medicine, Texas, Houston, USA³ International Hospital Kampala, Kampala, Uganda⁴ Ministry of Health, Kampala, Uganda⁵ UPMP, Kampala, Uganda⁶ Central Public Health Laboratories, Kampala, Uganda⁷ St. Elisabeth University College of Health Care and Social Sciences, Bratislava, Slovakia⁸ School of Health Care and Social Work, Trnava University, Trnava, Slovakia⁹ St. Elisabeth University, Bratislava, Slovakia¹⁰ St. Elisabeth University of Public Health and Social Sciences, Bratislava, Slovakia¹¹ CDC, Entebbe, Uganda

Background: Bloodstream infections are a common cause of admission, morbidity and mortality among children. The impact of antibiotic resistance and HIV infection on treatment outcome and surveillance is not known in many rural african settings.

Methods & Materials: We assessed the incidence of bloodstream infection and risk factors for death in prospective study from 4 rural settings in central Uganda. There were observed 953 consecutive admissions at pediatric ward of children with signs of infectious systemic disease. Blood wa obtained for serological test – HIV antibody test, culture and malaria microscopy, when indicated. There were recorded data on clinical findings, underlying diseases, antimicrobial drug used before and on admission, microbial agent findings and outcome.

Results: The incidence of laboratory confirmed bloodstream infection was 18,6% from admitted children with systemic infectious sings. More than 72% of the patients received prior admission at least one course of antimicrobial therapy and 55% antimalarial therapy, prior a blood culture. The most frequent isolates were Klebsiella spp., E. coli, Salmonella, enterococci, Staphylococcus aureus, Streptococcus spp. 34% of the pediatric patients had a malaria, 8% HIV infection and 2,5% Tubercuosis. 2% had viral meningitis and 3,3% bacterial infection, confirmed by CSF examination. 37,8% of the children with laboratory confirmed bloodstream infection died. 57% of the microbial agents had confirmed resistance at least to one common antibiotic. Mortality rate from gram-negative bloodstream infections (40,8%) was more than double that of malaria (27,2%). Significant risk factors for death were inappropriate antimicrobial and antimalarial treatment, resistance, admission in the hospital or clinic during last 2 weeks, presence of HIV, tuberculosis, malnutrition and cancer.

Conclusion: Bloodstream infections were less common than malaria in our settings but caused more death among children. The frequent use of antimicrobial drugs prior blood culture may have crucial impact on detection of the micro-organism, antibiotic testing and susceptibility to commonly used antibiotics. The findings that antimicrobial resistance, HIV-infection, cancer, tuberculosis and malnutrition predict fatal outcome calls for renewed efforts and recommendations on national but also local level.

<http://dx.doi.org/10.1016/j.ijid.2014.03.643>**Type: Poster Presentation**

Final Abstract Number: 41.004

Session: *Epidemiology and Public Health I*

Date: Thursday, April 3, 2014

Time: 12:45–14:15

Room: Ballroom

The Impact of seasonal influenza vaccination among persons 60 years and older, on rates of influenza-associated mortality and hospitalization from 1994 to 2009 in Sao Paulo State, Brazil

A. Ribeiro^{1,*}, P.-Y. Cheng², S. Mirza³, F. Palomeque², D.M.T. Zanetta⁴, M.-A. Widdowson²

¹ Epidemiologic Surveillance Center, Sao Paulo, Brazil² Centers for Disease Control and Prevention, Atlanta, GA, USA³ Centers for disease Control and Prevention, Atlanta, GA, USA⁴ School of Public Health, Sao Paulo, Brazil

Background: Complications of influenza infection are associated with high rates of morbidity and mortality among the elderly, the very young and, those with underlying medical conditions. Annual influenza vaccination is the most effective method for preventing influenza infection and complications. In Brazil, influenza vaccination began in 1999 for people ages ≥ 65 years and for people ages ≥ 60 years after 2000. In 1999, vaccination coverage among the elderly in the State of São Paulo was 80%. High coverage levels have been maintained up to 2009.

Methods & Materials: We conducted an ecological study on influenza-associated mortality and hospitalizations from 1994 to 2009 to examine the impact of the introduction of seasonal influenza vaccination in Sao Paulo in 1999 among persons ages ≥ 60 years. Data were extracted from the mortality information system-(SIM) and the hospitalization information system-(SIH), using ICD9 codes (1994–1998) and ICD10 (1999–2009). The Serfling model was used to establish the baseline and pneumonia&influenza deaths were modeled as a reference to define epidemic period (May – August for each calendar year). The influenza-associated deaths (or hospitalizations) were calculated as the observed deaths (or hospitalizations) minus the predicted baseline values during epidemic periods. Monthly estimates were summed to provide yearly estimates. A t-test was performed to compare rate differences before and after introduction of influenza vaccine with rates among persons ages 40–59 years.

Results: Analyses showed reductions in peak mortality and hospitalization rates associated with influenza after vaccine introduction. Comparing pre and post vaccination periods; the elderly experienced a 57% ($p < 0.001$) reduction in mortality rates; those ages 40–59 years saw a 25% ($p < 0.01$) reduction. Influenza-associated hospitalizations also decreased in both groups, with