Prevalence and Genotypes of HBV and HCV and the risk Factors for co-infection with HIV-1 Among Patients attending Ngong Sub-County Hospital, Kenya

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Background: Hepatitis B (HBV) and C (HCV) viruses have emerged as vital etiological agents for liver infections namely liver cirrhosis, chronic hepatitis, and hepatocellular carcinoma, which cause serious health problems in countless societies. Co-infections with HBV and HCV have become increasingly common among people living with HIV, resulting in a growing public health concern.

Methods & Materials: This was a descriptive cross-sectional study, aiming to determine the prevalence and genotypes of HBV and HCV and the risk factors for co-infection with HIV-1 among patients attending the Ngong Sub-County Hospital Comprehensive Care Clinic. 5 ml blood sample was collected from each study participant visiting the Comprehensive Care Clinic. The blood was screened for HbsAg and HCV antibodies using chemiluminescence immunoassay test according to the manufacturer’s instructions. The CD4 T-cell counts and HIV-1 viral load were determined using FacsCalibre machine and Abbott m2000rt System according to the manufacturer’s instructions respectively. A questionnaire was used to collect socio-demographic information and data on risk factors for co-infections with HIV-1. Positive samples for HbsAg and anti-HCV were subjected to PCR and sequenced for genotyping.

Results: 190 HIV-1-infected patients participated in this study: 150 (78.9%) women and 40 (21.1%) men. The prevalence of HBV was 5.8% (95% CI, 2.6%-8.9%) and of HCV was 4.2% (95% CI, 1.6%-7.4%). However, no individual was co-infected with the three viruses. HBV was associated with ARV treatment (OR 0.3; 95% CI, 0.1-0.9; P = .036), while HBV showed a significant association with condom usage (OR 0.3; 95% CI, 0.1-0.9; P = .039) and median viral load. 5 out of 11 samples that were positive for HbsAg, turned positive for HBV PCR and they belonged to genotype A and E. However, none of the samples that were positive for anti-HCV tested positive for HBC-PCR.

Conclusion: Although a high prevalence of HIV/HBV and HIV/HCV and several risk factors for co-infection were reported in this study, HIV-infected patients should be routinely screened for HBV and HCV infections and preventive and control measures should be put in place that include public education on HBV and HCV infections.

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Newborn virological outcome after intrauterine ZIKV exposure


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Background: Zika virus (ZIKV) infection has been associated with severe birth defects, including microcephaly and neurological complications. Intrauterine abnormalities have also been associated with ZIKV, reflecting the teratogenic effect of this arbovirus and are referred to as Congenital Zika Syndrome (CZS). The aimed was to report the virological outcomes in newborns exposed intrauterine to ZIKV in a cohort of ZIKV-infected pregnant women.

Methods & Materials: From February to October 2016, the Public Health Authority of São José do Rio Preto, SP, Brazil, detected pregnant women with acute ZIKV-like symptoms. After, 54 of them, with 5 to 38 weeks in their pregnancies, were enrolled in the study. All patients were tested to TORCHS and were monitored by a multidisciplinary medical team. After the delivery, newborns umbilical cord blood and/or urine were collected and tested to ZIKV by RT-qPCR and ELISA.

Results: Evidence of ZIKV exposure was detected in 18 of the 51 newborns (35%) evaluated at birth. The ZIKV RT-qPCR in the umbilical cord blood of 48 newborns showed positivity of 29% (14/48; mean Ct 36.5; IQR 31-36.6). ZIKV NS1 was reactive in the umbilical cord blood (12/15; 80%). ZIKV IgM was non-reactive. The most common symptoms reported by the mothers were rash, pruritus, and headache. Conjunctivitis/conjunctival hyperemia were not a prominent finding. Seven pregnant women had ZIKV and other infections as determined by laboratory testing. All the pregnant women from the study delivered before the time of this study, and there were no miscarriages, fetal deaths or microcephaly. Only one newborn was born pre-term.

Conclusion: The link to ZIKV may not be clearly established, but the only infectious agent detected in this case was ZIKV in an umbilical cord blood. More studies are necessary to understand the dynamics of the ZIKV infection during pregnancy. Thus, the monitoring of ZIKV infection during prenatal and postnatal care is extremely important to monitor the clinical outcome of the disease and the future consequences for the fetus.

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