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Short communication

Prevalence of Hepatitis B surface antigen among pregnant women attending antenatal clinic at Nyamagana District Hospital Mwanza, Tanzania

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Abstract

In developing countries there is no routine screening of hepatitis B virus (HBV) infection among pregnant women resulting into limited data on its magnitude. The objective of this study was to determine the prevalence and risk factors associated with active HBV infection among pregnant women attending antenatal clinic (ANC) in Mwanza City, Tanzania. A total of 211 pregnant women were serially enrolled between May and July 2014. Hepatitis B surface antigen (HBsAg) was determined using a rapid Immuno-chromatographic assay. The median age of the study population was 23 years (IQR 20-29 years). Of 211 pregnant women, 61.6% (130/211) were multigravidae. Eight (3.8%) of the pregnant women were positive with HBsAg. There was a significant difference in prevalence between primigravidae and multigravidae (0.8% vs. 8.6%, p=0.017). Active hepatitis B infection among pregnant women in Mwanza city is low and associated with multigravidity. Despite low prevalence of acute hepatitis B infection routine screening of HBsAg and anti HBsAg antibodies, coupled with the vaccination of those at risk should be introduced to prevent hepatitis B infection complications.

Keywords: Hepatitis B, surface antigen, pregnant women, Tanzania

Hepatitis B virus (HBV) infection is one of the common infectious diseases worldwide(Custer *et al.*, 2004). HBV infection in pregnancy, besides other maternal complications is related to a high rate of vertical transmission leading to foetal and infantile hepatitis (Su *et al.*, 2004). Previous studies in southern and northern Tanzania showed that the prevalence of HBsAg among pregnant women to range from 2%-6.3% (Menendez *et al.*, 1999; Panga, 2012). Previous study in Mwanza, Tanzania showed the risk of acquiring hepatitis B infection among men to be 7.2% (Jacobs *et al.*, 1997). This study aimed at determining the prevalence and risk factors associated with active HBV infection among pregnant women attending antenatal clinic in Mwanza city, Tanzania.

A total of 211 pregnant women attending routine antenatal care (ANC) for the first time at Nyamagana district hospital in Mwanza were serially enrolled between May and July 2014. Women with prior history of hepatitis B vaccination and those with known hepatitis B surface antigen status were excluded from the study. Socio-demographic characteristics were obtained using standardized data collection tool and HBsAg was determined by using rapid Immunochromatographic assay (DIALAB GmbH, Austria). Data were entered into Microsoft excel sheet and analyzed using STATA version 11 computer software.

The median age of study population was 23 years (IQR 20-29 years). Of 211 pregnant women, 61.6% (130/211) were multigravidae. All participants reported no history of vaccination against hepatitis B infection and only 4.7% (10/211) had one family member with jaundice. Out of 211 pregnant women, 8 (3.8%) had rapid test positive for HBsAg signifying active HBV infection. Higher prevalence

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of active HBV infection was observed among multigravidae than primigravidae (8.6% vs.0.8%, p= 0.006) (Table 1). No other factors were found to be associated with active HBV infection.

Table 1: The distribution of Hepatitis B Surface antigen in relation to socio-demographic characteristics

Characteristic	Response	Number, n (%)N=211	HBsAg positive, n (%)	*P*-value
Age group in years	16-20	61(28.9)	4(6.6)	
	21-25	77(36.5)	4(5.2)	
	26-30	41(19.4)	0(0.0)	
	31-35	22(10.7)	0 (0.0)	
	36-40	10(4.7)	0(0.0)	0.430
Marital status	Married	202(95.7)	8(4.0)	
	Separated	9(4.3)	0(0.0)	0.701
Occupation	Health care worker	1(0.5)	0(0.0)	0.962
	Non-health care worker	210(99.5)	8(3.8)	
Gravidity status	Primigravida	130(61.6)	1(0.8)	0.006
	Multigravida	81(38.4)	7(8.6)	

The prevalence of active HBV infection among pregnant women in this study is two-fold higher than that reported in a previous study in northern Tanzania (Panga, 2012). This could be explained by the fact that in our study majority of women were multigravidae. As evidenced in this study, other studies have also reported that multigravidity is associated with HBV infection (Azhar *et al.,* 2011; Jindal *et al.*, 2012). Other factors could be due to differences in risk behaviour among the women in these two locations. Already a previous study by Francis *et al.* (2014) has shown that Mwanza City has higher incidence of curable sexually transmitted infections than other regions in Tanzania. The prevalence of active HBV infection in our study was considerably lower than that reported in Southern Tanzania (Menendez *et al*., 1999). Moreover, the prevalence in this study is considerably lower than prevalence (8.0-13.0%) among pregnant women in Kenya, Malawi and Mali (Ahmed *et al.,* 1998; Okoth *et al.*, 2009; MacLean *et al.*, 2012). The prevalence found in this study suggests that Mwanza is an intermediate endemic zone for HBV according the World Health Organization classification (Kane, 1995).

In conclusion, tThe prevalence of active hepatitis B infection in this setting is comparable to previous studies done in Tanzania and is associated with multigravidity. Routine screening of HBsAg should be introduced in antenatal care services in Tanzania coupled with vaccination of childbearing age women.

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