

Brief report

Prevalence of Hepatitis C infection in Malawi and lack of association with sexually transmitted diseases

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Abstract. To investigate the role of sexual transmission for Hepatitis C virus (HCV) we studied its prevalence in sub-Saharan Africa where sexually transmitted diseases (STDs) are prevalent. Overall, HCV prevalence was 3.9% and similar in 206 STD

patients, 127 dermatology patients, and 100 blood donors. No association with HIV or syphilis was observed. Despite high prevalence of STDs, sexual transmission does not appear to significantly contribute to HCV transmission in Malawi.

Key words: Africa, Epidemiology, Hepatitis C, Sexual transmission, STD

Infection with the Hepatitis C virus (HCV) is now recognised as a major cause of chronic hepatitis, cirrhosis and hepatocellular cancer. While any type of exposure to blood constitutes a well established risk factor for HCV infection, the role of sexual contact is less clearly defined.

World-wide, HCV seroprevalence ranges from 0.5% in European blood donors to 11–22% in Egyptian blood donors. However, there is little information on HCV prevalence in sub-Saharan Africa. Reported rates range from 1.2% (urban blood donors, South Africa) to 5.6% (school children, Ghana), with an estimated average seroprevalence of 4.2% in healthy adults [1]. However, in a recent survey, over 16% of pregnant women in rural Malawi were positive for HCV antibodies [2]. We studied HCV prevalence in Malawian men and compared rates in populations at high and low risk for sexual transmission.

The study was conducted at Lilongwe Central Hospital in Malawi. Serum was obtained in 1996 from 100 consecutive, voluntary, non-related blood donors as well as from 206 men with and 127 dermatology patients without urethritis recruited in a study of human immunodeficiency virus (HIV) shedding in semen [3]. Selection of the study subjects has been described in the parent study [3]. The HIV antibody status of the urethritis and dermatology patients was determined by ELISA and Western blot. Serologic tests for syphilis were locally performed by VDRL or RPR testing according to the current policy in Malawi. HCV serology was performed on frozen samples by a third generation EIA (Roche, Switzerland) and verified by a confirmatory ELISA kit (Abbott, Switzerland).

All three groups were in a similar age group (mean age 27.4, 28.5 and 29.4, respectively). The seroprevalence of HIV was highest in patients with urethritis (54.6%), followed by dermatology patients (47.2%) and blood donors (20.0%, Table 1). The blood donor rate was significantly lower than that found in either of the other two groups ($p < 0.001$, χ^2). Syphilis seropositivity ranged from 4.0–5.8%. The overall prevalence of anti-HCV antibodies was 3.9% (17/433) with no statistically significant differences between population groups ($p = 0.85$). The presence of anti-HCV antibodies was not significantly associated with either HIV or syphilis serostatus in any of the groups and neither was the occurrence of HIV/HCV or HIV/syphilis coinfection (total number was 7 and 11, respectively).

The overall seroprevalence of anti-hepatitis C antibodies of 3.9% found in this study is consistent with other reports of the prevalence of HCV in the general population in sub-Saharan Africa [1] but markedly lower than previously reported in pregnant women in rural Malawi [2]. The prevalence was similar in all study groups despite their varying risk for sexually transmitted diseases (STDs), suggesting that sexual contact is not a major mode of HCV transmission in Malawi which is consistent with other studies of heterosexual transmission of HCV [4]. The major risk factor is most likely the use of transfusion services and availability of disposable syringes and both factors vary widely over time and among different regions.

HIV infection has been found to be independently associated with HCV infection in previous studies. However, the strength of this association is dependent on the mode of HIV acquisition and a negative

Table 1. Prevalence of HCV, HIV and syphilis by population group

| Population | n | HCV | | HIV | | Syphilis | |
|----------------------|-----|----------|-----------------|----------|------------------|----------|-----------------|
| | | No. pos. | % pos. (95% CI) | No. pos. | % pos. (95% CI) | No. pos. | % pos. (95% CI) |
| Urethritis patients | 206 | 9 | 4.4 (2.0–8.1) | 113 | 54.9 (47.8–61.8) | 12 | 5.8 (3.0–10.0) |
| Dermatology patients | 127 | 4 | 3.2 (0.9–7.9) | 60 | 47.2 (38.3–56.3) | 8 | 6.3 (2.8–12.0) |
| Blood donors | 100 | 4 | 4.0 (1.1–9.9) | 20 | 20.0 (12.7–29.2) | 4 | 4.0 (1.1–9.9) |

association has been reported in those with sexually acquired HIV infection [5]. Although Malawi has a high rate of HIV in the general population, this did not seem to produce higher than expected rates of HCV infection. Indeed, a negative association between HIV and HCV infections was seen in patients attending the STD clinic (OR: 0.64), supporting the limited role of sexual intercourse in transmission of HCV.

In Malawi, intravenous drug use is virtually unknown and haemodialysis is not available. However, needles, syringes, and surgical instruments are often sterilized without adequate quality control measures and could be a possible mode of transmission of HCV. Another likely mode of transmission is through blood transfusion. The blood supply in Malawi is routinely screened for HIV, syphilis, and Hepatitis B, but not for Hepatitis C. Further research is needed to determine the cost-effectiveness of screening the blood supply for hepatitis C and periodic surveillance of rates of hepatitis C in blood donors should be carried out.

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