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Letter to Editor

Hepatitis Delta among pregnant women in Antananarivo, Madagascar

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Dear Editor

Infection with hepatitis B virus (HBV) is a major worldwide public health problem; more than 2 billion people have been or are infected with this virus. Madagascar is classified by the WHO as a highly endemic country for HBV, with a chronic HBsAg carriage rate of more than 8% [1]. A study of pregnant women of Antananarivo has disclosed a rate of HbsAg prevalence estimated at 1.90 [2]. In Madagascar, no data is currently available regarding Hepatitis Delta (VHD) virus infection while the virus affects 5% of the chronic carriers, that is approximately 15 to 20 million people around the world. Our study aims at determining Hepatitis Delta prevalence for pregnant women, carriers of HbsAg who came for antenatal care at the Befelatanana obstetrics and gynecology teaching hospital department from February 2012 up to December 31, 2015.For any pregnant women who are positive for HbsAg, ELISA technique was used (Mediff® France) to seek Hbe antigen at the hospital's lab while the antiHBe antibodies, HDV total antibodies and the HDVRNA have been explored at the National Reference Center pf Hepatitis Delta–Hôpitaux Universitaires Paris Seine-Saint-Denis France by using ELISA kit (Architect® Abbott, USA and Diasorin® Italy) and RT-PCR Eurobioplex HDV kit (Eurobio® France), respectively. All pregnant patients answered a questionnaire documenting their age, parity, personal medical history, especially for transfusion, tattoo, sexually transmitted infections (STI). For prevalence rates calculation, chi square analyses including univariate and bivariate calculations were done using XLSTAT and Epiinfo 2000 ver. 3.5.1 software (CDC, Atlanta, USA). Results with a p value < 0.05 were retained as statistically significant.

During the study period, 2.975 pregnant women have been screened for hepatitis B and 56 women are HbsAg-carriers. During the examination, two patients (3.57%) live with HDV total antibodies, however, the search of viral RNA by RT-PCR seems to be negative for both patients. Three (5.35%) women are carriers of HbeAg but none of them is HDV-positive (P=0.64)and 35 women (62.5%) have antiHBe seroconversion, one of whom is HDV-positive (P<0.001). The pregnant women who carry the HbsAg are between 15 to 43 years old with an average age of 26.15. The patients who are HDV-positive have an average age of 22.5 (P<0.001) (figure 1).A large majority (56%) of the pregnant women, carriers of HbsAg and HDV antibodies have been detected in the third trimester of pregnancy (P<0.001).HDV-positive patients have been detected only amongst primiparous women. However, pregnant women, carriers of HbsAg are mostly multiparous (P<0.001).None has medical history of blood transfusion or sexually transmitted infection.

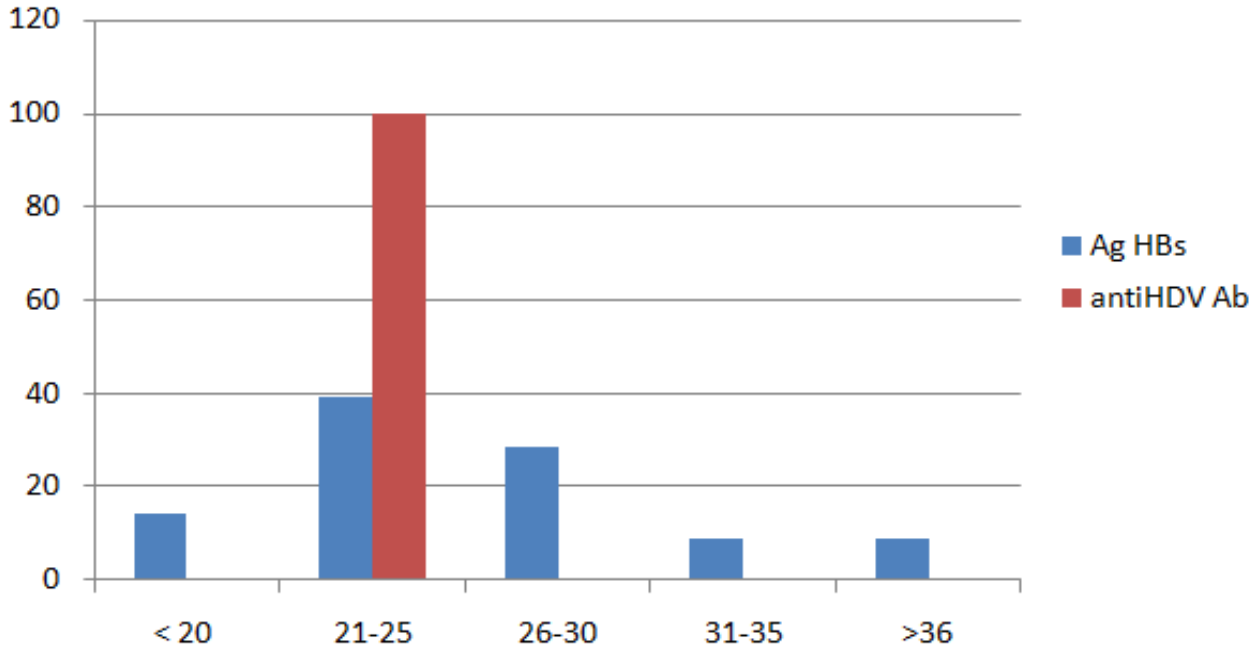

Figure 1 : Distribution of HbsAg and antibodies anti HVD positive patients depending on age.

HDV infection situation is very alarming in developing countries, in endemic regions for hepatitis delta, prevalence may be higher, 31% of HD antigen in Kenya, 9.9% of antibodies antiHVD and viral RNA in a multi-centre study carried out in Burkina Faso, Nigeria and Chad [3][4]. In the intermediate regions such as Eastern and Southern Europe as well as Central America, the anti-HD prevalence is between 5 and 10 % [5]. In Western Europe and Northern Europe as well as in Northern America, the prevalence amongst the chronic carriers of HbsAg is under 4 % [6].In Madagascar, there is no data about the HVD for the general population and even less for pregnant women. However, WHO has classified the country amongst highly endemic countries, a recent study on the national territory displays HBsAg seroprevalence of 6.9% [7].In our study, the women HDV-positive are between 21 and 25 years old(P<0.001), matching with the data reported in Gabon (25 years)with higher frequency amongst primiparous[8]. In contrast to other highly endemic countries, we have found a low prevalence of HbeAg (5.35%) but with a high rate of antibody antiHbe (62.5%).Due to lack of means, the HBV viral load and the genotyping of our strains could not be realized, recognizing potential early mutant. In a study carried out by *Kramvis et al*. (2005) in the northern part of Madagascar, seven early mutations have been identified in the genotype E and D for patients having antibody anti-Hbe [9].

At this time, in Madagascar, it seems necessary to put in place the search for HDV total antibodies amongst HbsAg carriers and later on, to put in place molecular research. This initiative will allow determining an overall prevalence of this infection and improving patients care.

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