

HEPATITIS B: CHANGES IN EPIDEMIOLOGICAL AND MOLECULAR FEATURES OF AFRO-BRAZILIAN COMMUNITIES, CENTRAL BRAZIL

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BACKGROUND

During the slavery period in Brazil some African captives managed to escape to refuge places, settling in remote communities without significant additional admixture. Over ten years ago, previous studies conducted by our group in two Afro-Brazilian communities from Central Brazil, Furnas dos Dionísios (FD) and São Benedito (SB), detected high prevalence rates of HBV infection (42.7% and 16.0%) and susceptible individuals (55.3% and 63.0%) as well as a low prevalence of anti-HBs alone (2.0% and 21.0%). Also in FD, a prevalence of occult HBV infection (OBI) was found to be 18.3%. These findings resulted in actions for health promotion such as HBV vaccine supply, health educational campaigns and referral of active hepatitis B cases for clinical care. Given the above, we reassessed the epidemiological situation of HBV infection nowadays in these communities with the aim to qualify the effectiveness of the measures adopted and to design future interventions.

METHODS

Between 2015 and 2016, blood samples were collected from 331 Afro-descendants (207 from FD and 124 from SB) previously interviewed regarding socioeconomic and behavioral characteristics. All serum samples were tested for HBV serological markers (HBsAg, total anti-HBc, anti-HBc IgM and anti-HBs) and screened for the presence of HBV-DNA by semi-nested PCR. Samples HBV-DNA positive were sequenced and phylogenetically analyzed.

RESULTS

Considering the two communities together, the overall prevalence of HBV infection and the chronic carriers remained respectively around 30.2% and 5.5%. After more than one decade of the first interventions, the proportion of individuals susceptible to HBV infection fell from 58.9% to 26.3% (55.3% to 18.8% in FD and 63.0% to 38.7% in SB), while individuals presenting HBV vaccine immune response increased from 10.7% to 43.5% (2% to 45.9% in FD and 21.0% to 39.5% in SB) (fig. 1). Compared to SB, FD has a lower proportion of individuals who are still susceptible to HBV ($p < 0.0001$), however it has a higher overall prevalence of this infection (35.3% vs 21.8%) (fig. 2). After multivariate analysis, being a FD community resident, history of family hepatitis and increasing age were factors associated with exposure to HBV infection (fig. 3). Regarding OBI, two samples were found to be positive (2/313 – 0.64%), one from each community. All sequenced samples clustered with sequences from Asian-American clade of the HBV subgenotype A1.

CONCLUSIONS

These results demonstrate a significant decrease in the number of individuals susceptible to HBV infection in FD and SB communities, but also the maintenance of high levels of chronic hepatitis B infection, reinforcing the importance of offering HBV vaccine to all vulnerable populations. Epidemiological and molecular studies in Afro-descendant communities are needed for the design of effective strategies to prevent and control HBV infection in populations that are difficult to access.

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Figure 1. Comparison between HBV epidemiological features among Afro-descendants subjects in the past and present, Brazil Central.

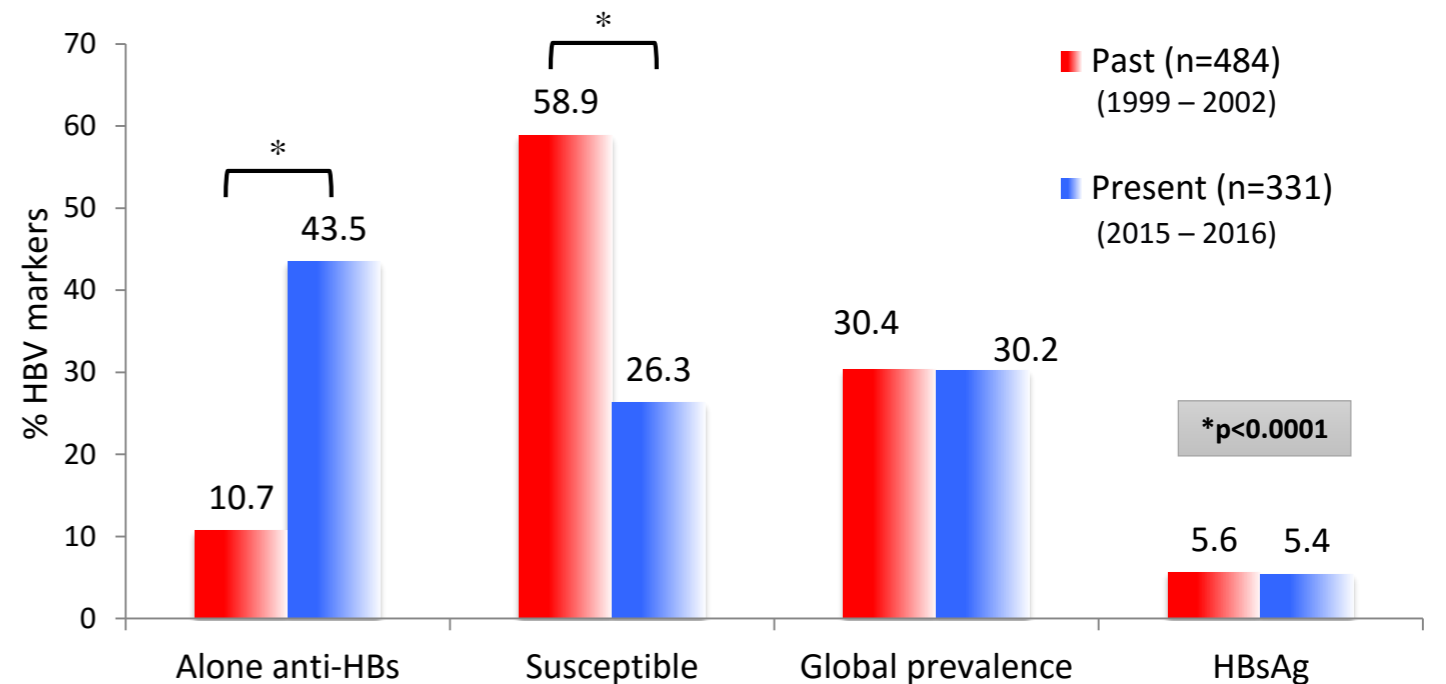


Figure 2. Comparison between HBV epidemiological features among residents from Furnas dos Dionísios and São Benedito communities, Brazil Central, 2015 – 2016.

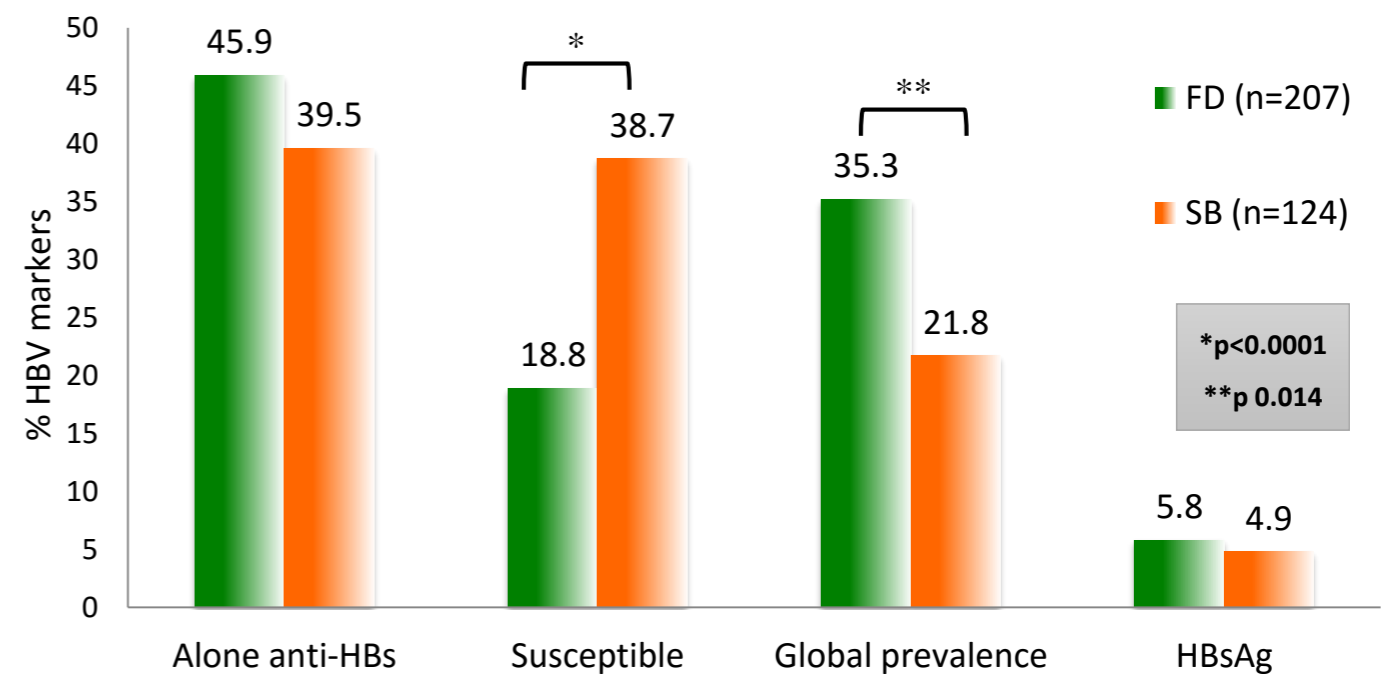
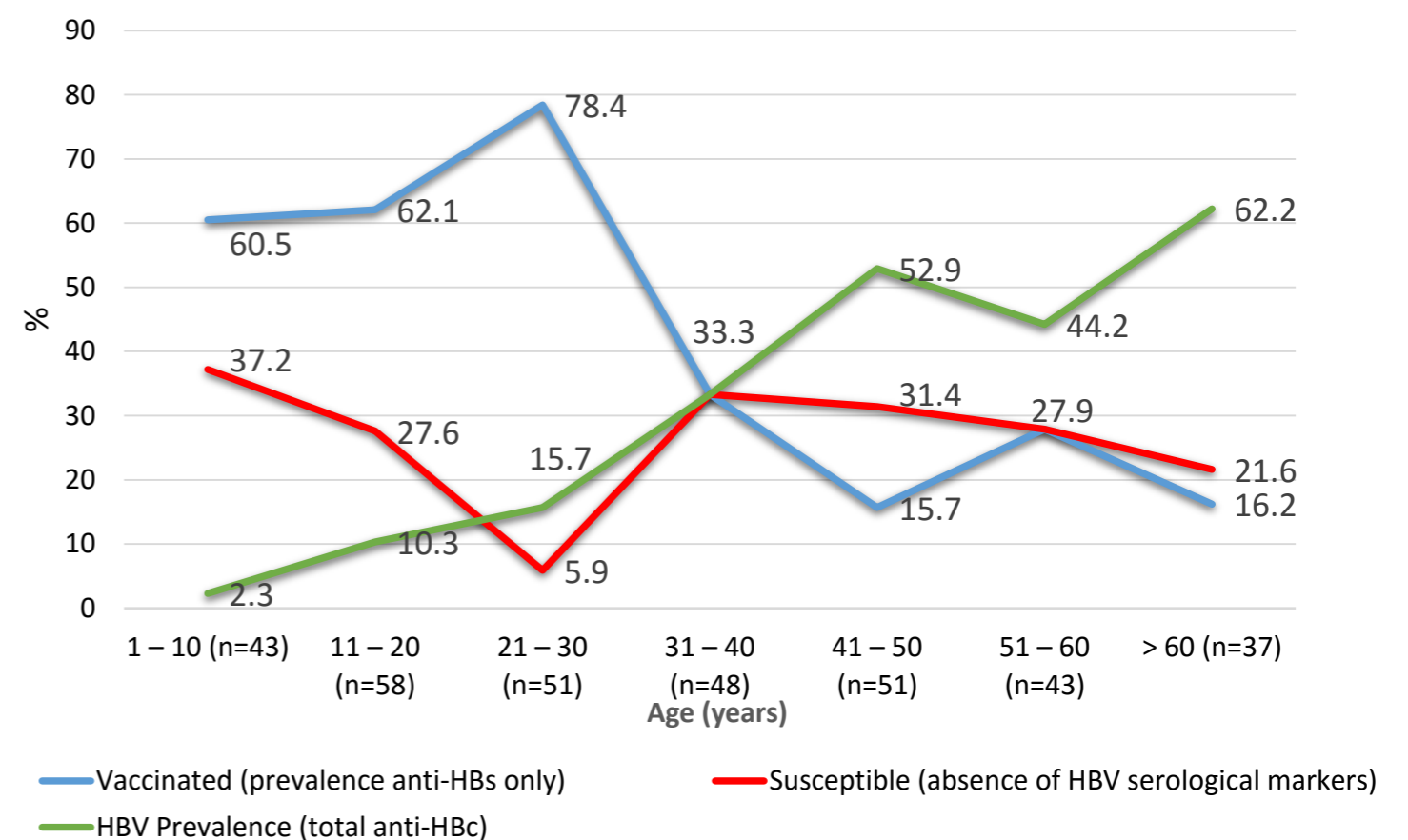


Figure 3. HBV serological profile according to age (years) among Afro-descendants subjects, Brazil Central, 2015 - 2016 (n=331).



CONFLICTS OF INTEREST

The author(s) declare(s) that there is no conflict of interest regarding the publication of this poster.

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