

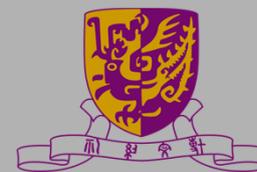
# Does chronic hepatitis B carrier status affect bone mineral density changes during pregnancy?



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**Background:** Current literature has shown that non-cirrhotic chronic hepatitis can be associated with reduced bone mineral density (BMD). On the other hand, a significant fall in BMD has been observed in pregnancy as part of the physiological changes of pregnancy.

**Objectives:** To evaluate the association between bone mineral density (BMD) changes and chronic hepatitis B carrier status in low risk pregnant women

**Methods:** Consecutive patients were recruited from a general obstetric clinic over a period of 9 months. Quantitative USG measurements of BMD were performed at the os calcis bilaterally between 14-20 weeks, and at 36-38 weeks. A questionnaire survey was done on all recruited women at the time of the first BMD measurement. All women were routinely screened for chronic hepatitis B carrier status at booking and their hepatitis carrier status was correlated with BMD changes

**Results:** A total of 390 women were recruited, and the mean BMD loss from early to late pregnancy was 0.0301 g/cm<sup>2</sup>, SD 0.043. There were 34 chronic hepatitis B antigen (HbsAg) carriers within this cohort (8.7%). There were no significant differences in the age, parity, height and early pregnancy body mass index between the HbsAg carriers and non-carriers. The early pregnancy mean BMD value was 0.591 g/cm<sup>2</sup> in the HbsAg group and 0.602 g/cm<sup>2</sup> in the non-carrier group (p=0.56), and the mean BMD loss detected 0.035 and 0.029 respectively (p=0.47). No apparent differences were found between the two groups.

## Conclusion:

Chronic hepatitis B antigen carrier status had no effect on the physiological fall in BMD during pregnancy.

Figure 1. BMD changes between HbsAg carriers and non-carriers

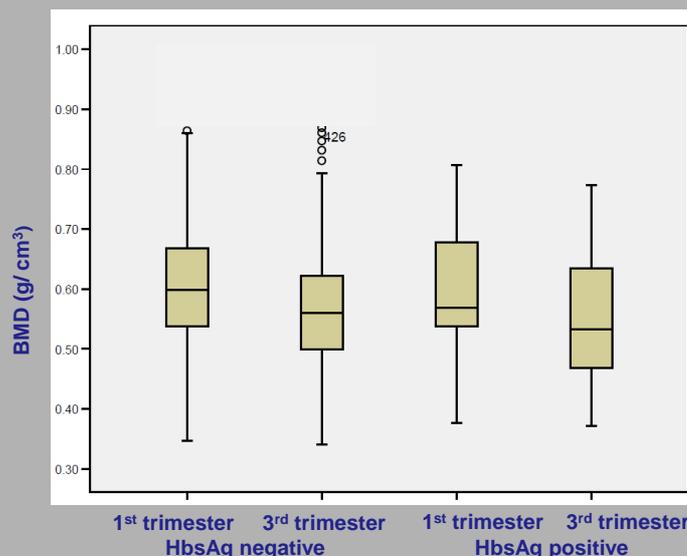


Table 2. Comparison of epidemiological and BMD characteristics between HbsAg carriers and non-carriers

	No HbsAg (n =356)(SD)	HbsAg (n =34)(SD)	p-value; Mean difference (95% CI)
Age (yrs)	31.1 (4.01)	31.8 (4.3)	0.28; 0.77 (-2.19 to 0.65)
Height (cm)	156.6 (5.42)	157.1 (4.82)	0.62; -0.48 (-2.37 to 1.41)
Weight (kg)	56.9 (8.08)	57.4 (9.41)	0.75; -0.45 (-3.35 to 2.44)
Initial Body Mass Index (BMI)	23.2 (3.12)	23.2 (3.47)	0.98; -0.014 (-1.12 to 1.1)
Initial Body Fat %	30.4 (5.74)	29.5 (5.47)	0.38; -0.90 (-1.15 to 2.92)
Initial BMD (g/cm <sup>3</sup> )	0.602 (0.106)	0.591 (0.096)	0.56; -0.010 (-0.026 to 0.048)
Weight gain in pregnancy (kg)	9.84 (3.11)	10.1 (2.89)	0.69; -0.22 (-1.31 to 0.87)
Fat % gain in pregnancy(%)	7.61 (2.77)	7.88 (2.96)	0.59; -0.26 (-1.24 to 0.72)
Pregnancy BMD Loss (g/cm <sup>3</sup> )	0.029 (0.043)	0.035 (0.038)	0.47; -0.005 (-0.020 to 0.009)