

Default Submission Type

Hepatitis B

DEFAULT_SUBMISSION_TYPE-130

BONE MINERAL DENSITY AND RENAL FUNCTION IN CHRONIC HEPATITIS B PATIENTS RECEIVING NUCLEOTIDE VERSUS NUCLEOSIDE ANALOGS: A PILOT PROSPECTIVE STUDY

Chalermrat Bunchorntavakul¹, Vitoon Taweewattanakitbavorn¹

¹Gastroenterology, Rajavithi Hospital, Bangkok, Thailand

Submit to ILC: No

Do you want to apply for a YI bursary?: No

Introduction: Nucleotide analogs (tenofovir and adefovir) are associated with negative impact on bone mineral density (BMD) and renal function, which is mainly explained by proximal tubular dysfunction and hypophosphatemia. However, prospective data assessing bone and renal safety of these agents are limited.

Aims: To evaluate the prevalence of bone disease among patients with non-cirrhotic CHB receiving antiviral therapy and to evaluate changes in BMD and glomerular filtration rate (GFR) between CHB patients receiving nucleotide (NTA) versus nucleoside analogs (NSA).

Methodology: Data of CHB patients without established cirrhosis who had been treated with oral antiviral therapy for <1 year in a single tertiary center (Rajavithi Hospital, Bangkok) were prospectively collected between 2012-2014. Patients with significant comorbidities or receiving the treatment for bone disease (other than calcium supplement) were excluded. BMD assessment was performed by dual x-ray absorptiometry at the lumbar spine (LS) and the femoral neck (FN). The results of BMD were compared with mean BMD from age- and sex- matched controls from Asian database and expressed as SD of the mean (Z-score). Osteopenia and osteoporosis were defined as BMD between 1 and 2.5 and more than 2.5 SD below the mean BMD for young adults (T-score), respectively. The GFR was estimated by Cockcroft-Gault method.

Results: Fourteen patients were included; 86% were men, 43% were HBeAg positive, and the median age was 41.1 (25.6-63.5) years. Eight patients had been treated with NTA (5 tenofovir, 3 adefovir) and 6 patients had been treated with NSA (4 lamivudine, 2 entecavir), with a median follow-up period of 1.5 years (1.2-1.6). At baseline, the overall prevalence of osteoporosis and osteopenia were 7.1% and 35.7%, respectively and the median GFR was 95.4 (47-144) ml/min. LS-BMD in CHB patients was slightly lower than age-matched population with median Z-scores of -0.2 (-2.6 to 2.0) at LS and 0.1 (-1.6 to 2.1) at FN region. Baseline characteristics and changes in BMD and GFR over years of follow up were summarized in the table. There was a trend toward a decrease in LS-BMD and GFR in patients who received NTA compared to those who received NSA, however this was not statistically significant.

Conclusions: Osteopenia is relatively common in CHB patients without cirrhosis receiving oral antiviral therapy. There was a non-significant trend toward a reduction in LS-BMD (representing trabecular bone) and GFR in patients receiving NTA.

Figure:

Baseline Characteristics and Changes in BMD and GFR: Patients Receiving Nucleotide versus Nucleoside Analogs

| Parameter | Nucleotide analogs (N=8) | Nucleoside analogs (N=6) | P-values |
|------------------------------|--------------------------|--------------------------|----------|
| Age, years | 43.1 (±11.2) | 44.7 (±10.7) | 0.785 |
| Sex (male/female) | 7/1 | 5/1 | >0.99 |
| BMI, kg/m ² | 23.8 (±2.9) | 26.1 (±5.0) | 0.356 |
| HBeAg status (+/-) | 3/5 | 3/3 | >0.99 |
| % Changes in LS-BMD per year | -0.44 (±1.34) | +0.38 (±1.52) | 0.317 |
| % Changes in FN-BMD per year | -0.23 (±0.80) | -0.42 (±1.12) | 0.730 |
| % Changes in GFR per year | -10.0 (±14.3) | +4.2 (±11.8) | 0.066 |

BMD, bone mass density; LS, lumbar spine; FN, femoral neck
GFR, glomerular filtration rate; BMI, body mass index

Disclosure of Interest: None Declared

เสนอโดยนายเฉลิมรัฐ ปัญชรเทวกุล นายแพทย์ชำนาญการพิเศษ โรงพยาบาลราชวิถี

ในการประชุม Optimal Management of Hepatitis B Virus Infection

ซึ่งจัดขึ้นระหว่างวันที่ 26 - 27 กันยายน 2557 ณ อาคารรัฐสภาเสนาบดี