HO-01

CORRELATION BETWEEN SERUM TARTRATE-RESISTANT ACID PHOSPHATASE 5B ACTIVITY AND A SEMI-QUANTITATIVE BONE SCINTIGRAPHY INDEX IN BREAST CANCER PATIENTS WITH BONE METASTASIS

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BACKGROUND/AIMS: Bone scintigraphy is currently the standard method to monitor bone morbidity in breast cancer (BC) patients. Measurement of bone biochemical markers may be an efficient complement to improve the accuracy of bone scintigraphy. This study aims to determine the efficacy of a novel osteoclast marker, serum tartrate-resistant acid phosphatase 5b (TRACP5b) activity, and a semi-quantitative bone scintigraphy index for monitoring bone metastasis (BM) in BC patients.

METHODS: Ad hoc analysis of two prospective studies was conducted at a single institution. A total of 49 BC patients with BM who had detailed records of clinical condition, bone scintigraphy and concordant serum TRACP5b level were included. Measurements included performance status, visual analogue pain score, selected laboratory tests for tumor markers, serum TRACP5b activity and a semi-quantitative bone scintigraphy index (SQBSI).

RESULTS: There was significant correlation between serum TRACP5b activity and SQBSI in untreated BC patients with BM, but the strength lessened after treatment. There was no significant correlation between change of serum TRACP5b activity (△TRACP5b) and change of SQBSI (△SQBSI) in treated patients. Compared with △SQBSI, △TRACP5b had higher sensitivity, specificity, positive predictive value and likelihood ratio for reflecting the clinical scenarios of bone morbidity over time.

DISCUSSION/CONCLUSIONS: Serum TRACP5b activity was more predictive than SQBSI for a treatment response in BC with BM. Although bone scintigraphy will continue to be useful for assessment of BM in BC patients, quantitative measurement of serum TRACP5b activitymay also be helpful in increasing specificity and sensitivity.

Key words: breast cancer, bone metastasis, Tartrate-Resistant Acid Phosphatase 5b