tumour biology and pathology

18P TARTRATE-RESISTANT ACID PHOSPHATASE ISOFORM 5B (TRACP 5B) AS SERUM MARKER OF BONE METASTASES FROM NON-Small CELL LUNG CANCER (NSCLC) AND BREAST CANCER. PRELIMINARY RESULTS

F. Lumachi1, A. Del Conte2, F. Mazza3, S.M.M. Basso4, G.B. Chiara4

1Department of Surgery Oncology & Gastroenterology (DiSCOG), University of Padua, School of Medicine, Padua, Italy
2Oncology Unit, Azienda Ospedaliera Sta Maria degli Angeli, Pordenone, Italy
3Pneumology, S. Maria degli Angeli Hospital, Pordenone, Italy
4Surgery 1, S. Maria degli Angeli Hospital, Pordenone, Italy

Aim: The skeleton is a frequent site of metastasis from both non-small cell lung cancer (NSCLC) and breast cancer (BC). It can also be the only site in patients with advanced or aggressive tumors. Delayed diagnosis of bone metastases (BM) may seriously affect the quality of life of patients, and is associated with several adverse skeletal-related events. Thus, there is the need of early diagnosis of BMs. Tartrate-resistant acid phosphatase isoform 5b (TRACP 5b) is a well-established serum marker of osteoclast activity and bone resorption. The aim of this study was to evaluate the usefulness of TRACP 5b measurement in patients with BMs.

Methods: TRAP5b was assayed in 31 patients with BMs from NSCLC (N = 16, median age 63 years, range 50-68 years), and BC (N = 15, median age 52 years, range 34-59 years) by two-site quantitative enzyme-linked immunosorbent sandwich assay (ELISA). Control groups consisted of 18 (NSCLC) and 19 (BC) sex- and stage-matched patients, in whom the presence of BMs had been excluded using 18F-FDG PET/CT scanning.

Results: The results (NSCLC vs. BC) were the following (95% CI): sensitivity = 86.7% (59.5-97.9) vs. 66.7% (38.4-88.0), $\chi^2 = 12.17$, $p = 0.004$; specificity = 94.4% (72.6-99.1) vs. 89.5 (66.8-98.4), $\chi^2 = 1.16$, $p = 0.20$; disease prevalence = 45.4 (28.1-63.6) vs. 44.1 (27.2-62.1), $\chi^2 = 0.02$, $p = 0.88$; positive predictive value (PPV) = 92.9% (66.1-97.9) vs. 83.3% (51.6-97.4), $\chi^2 = 4.73$, $p = 0.03$; negative predictive value (NPV) = 89.5% (66.8-98.4) vs. 77.3% (54.6-92.1), $\chi^2 = 6.13$, $p = 0.01$. The positive likelihood ratio (NSCLC vs. BC) was 15.6 (2.3-105.9) vs. 6.3 (1.6-24.6) and the negative likelihood ratio was 0.14 (0.04-0.52) vs. 0.37 (0.18-0.77), respectively.

Conclusions: TRACP 5b is a marker significantly more sensitive and specific in patients with metastatic NSCLC than in those with metastatic BC. Our preliminary results suggest that it should be routinely used in patients with advanced NSCLC with the aim of early detection of BMs.

Disclosure: All authors have declared no conflicts of interest.