

## **CORRELATION BETWEEN <sup>99m</sup>Tc – DPD BONE SCAN FINDINGS AND Ca 15-3 VALUES IN BREAST CANCER PATIENTS AFTER NEOADJUVANT CHEMOTHERAPY**

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**AIM:** The aim of this study was to evaluate the correlation of CA 15-3, bone scan and complementary imaging methods (Rtg, Ct and MRI) in follow up of breast cancer patients, after neoadjuvant chemotherapy.

**PATIENTS AND METHODS:** Sixty three patients with histologically proven breast cancer were included (mean age 58, range 41-82) and followed for having positive bone scan findings. Information was confirmed with other imaging methods: Rtg, Ct, MRI. Ca 15-3 values were measured in the same time with the bone scan, using the same commercial test over the follow-up period. Bone scan were classified as negative (group 1), diffuse increased uptake in calvaria (group 2), solitary hot spot lesion (group 3), benign disorder (group 4), mixed benign and malignant patterns (group 5), multiple  $\geq 3$  metastatic involvement (group 6).

**RESULTS:** Number of patients in groups 1 to 6 were: 13, 5, 18, 6, 4, 17 respectively and had mean Ca 15-3 value U/ml: 17.6 (range 9.2-43.3); 12.7 (range 6.9–18.5); 74.26 (range 7.3-469.2); 92.9 (range 10.0–480.0); 52.8 (range 15.1.-150.0); 404.8 range 8.9- 3160.0). Five patients in group 6 had normal Ca 15-3- values. Metastatic involvement: pulmo, liver, skin was respectively 27.8%; 27.8%, 5.6% in group 3 and 11.8%; 35.3%; 5.9% and brain 5.9% in group 6. The statistical difference was not evident in groups 1 vs. 2+3+4+5 but was excellent ( $p < 0.01$ ) in group 6 vs. 2+3+4+5 (Mann-Whitney test). Multiple metastatic bone scan were confirmed with radiology 50% (Rtg 6 in 14, Ct 2 in 2); benign lesions 100% (Rtg); 20% (Rtg) in calvaria; solitary hot spot lesions 53 % (ribs 6 in 8; pelvis 2 in 3, vertebra 1 in 1 with Rtg and MRI 100% 2 in 2) and 8 of them solitary malignant lesions.

**CONCLUSION:** Normal Ca 15-3 value does not exclude bone metastasis, and cannot be helpful in confirming solitary lesions. It has excellent specificity, and is good predictor of a progressive disease, during follow up period. Bone scan pathological findings require careful radiographic evaluation, for early diagnosis.