Effective Screening and Early Detection of Breast Cancer Recurrence: Where does the Sweet Spot Lie?

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Introduction

- Breast Cancer (BC) continues to be the most commonly diagnosed malignancy and the second most common cause of cancer related mortality in women.
- While Metastatic Recurrence (MR) in Solid Organ Tumors (SOTs) usually occurs close to the index diagnosis, MR in BC has a wide window and follows unpredictable patterns.
- As for other SOTs, Disseminated Tumor Cells (DTCs) are the primary culprits, and in the case of BC, are divided into early and late DTCs.
- Evidence regarding the benefit of aggressive methods for early detection of overall and disease free survival has been conflicting in the past [1].
- We present a case of elevated CEA in a patient with BC who presented with MR.

Case Presentation

- Patient was a 64 years old female with past medical history of Invasive Ductal Carcinoma (IDC) of the right breast with ipsilateral axillary lymph node metastases 7 years ago, treated with lumpectomy with post operative Adriamycin, Cytoxan and Taxol.
- She was unable to comply with endocrine therapy at the time.
- A screening mammogram 6 months ago was normal.
- She then developed IDC of the left breast without any axillary metastases 3 years ago that was treated with lumpectomy and postoperative radiation followed by long term endocrine therapy with Tamoxifen.
- She presented to the outpatient clinic with constipation refractory to escalating doses of laxatives and progressive, nagging lower back pain.
- CEA level was 602 ng/ml. X ray of the lumbar spine showed new sclerotic foci in the ribs, spine and pelvis.
- Computed Tomography (CT) abdomen/pelvis showed diffuse, sclerotic osseous metastatic disease throughout the visualized skeleton (Figure 1).
- A colonoscopy was done and found no abnormalities. MRI brain ruled out brain metastasis.
- CT guided biopsy of a lesion on the right iliac bone showed fragments of bone with foci of metastatic carcinoma with partial lobular features, consistent with breast origin, with immunohistochemical stains being positive for GATA3 and estrogen receptor protein and negative for progesterone receptor protein and Her-2
- Patient was started on Anastrozole, Abemaciclib and Zoledronate.

Discussion

- With MR rates of up to 30 percent in BC and association of early detection of MR with improved survival, long term surveillance of BC in remission is a challenge for medical oncology [2].
- Mainstay of surveillance is mammograms, guidance on which is mostly based on expert opinion [3].
- Although CEA and Cancer Antigens (CAs) 15-3 and 27.29 were not endorsed in the last American Society of Clinical Oncology (ASCO), the overall evidence on these is conflicting [4].
- Recently, some non-invasive biomarkers have shown the capacity to detect Minimal Residual Disease (MRD) before it manifests clinically [1].
- It appears that the sweet spot between effective detection and avoidance of unnecessary intervention lies somewhere between the various available modalities.

References

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