

Inflammatory Breast Cancer **(clinic-pathologic & therapeutic overview)**

Hussein Khaled MD & Omar Sherif Omar MD, DU, FEBS
Cairo University

Inflammatory breast cancer (IBC) is a rare but aggressive subtype of breast cancer, which historically was considered uniformly fatal. IBC accounts for about 5% of all cases of breast cancer. In general, women with inflammatory breast cancer present at a younger age, are more likely to have metastatic disease at diagnosis and have shorter survival than women with non-inflammatory breast cancer. According to the latest revision of the AJCC staging guidelines, inflammatory carcinoma is classified at T4d, which makes all patients with inflammatory carcinoma stage IIIB, IIIC, or IV depending on the nodal status and presence of distant metastases. Clinically, inflammatory breast cancer is characterized by the rapid onset of breast warmth, erythema, and edema (peau d'orange) often without a well-defined mass. Along with extensive breast involvement, women with inflammatory carcinoma often have early involvement of the axillary lymph nodes. The rapidity of growth can be used to distinguish true 'primary' inflammatory carcinoma from neglected locally advanced breast tumors that have developed inflammatory features ('secondary' inflammatory carcinomas). IBC is not associated with a particular histologic subtype and can occur in association with infiltrating ductal or lobular, small cell, medullary, and large cell carcinomas. The characteristic pathologic finding is dermal lymphatic invasion by carcinoma, which can lead to obstruction of the lymphatic drainage causing the clinical picture of erythema and edema. However, the diagnosis of inflammatory carcinoma is made on clinical grounds, and the absence of dermal lymphatic invasion does not exclude the diagnosis. Patients with the clinical features of inflammatory carcinoma should be treated aggressively even if they do not have pathologic evidence of dermal lymphatic invasion. The most significant prognostic factor is the presence of lymph node involvement. Patients with lymph node involvement have shorter disease-free and overall survival than patients with node-negative disease. Extensive erythema, the absence of estrogen receptor, and the presence of mutations in the *p53* gene have also been associated with poorer outcomes. The development of active chemotherapy regimens, used in combination with local therapy, has resulted in a marked improvement in prognosis. The initial component of therapy should be induction chemotherapy. Many different regimens have been used, most of which are anthracycline-based. In addition, initial response to induction chemotherapy was an important predictor of survival. After induction chemotherapy, patients should proceed with definitive local therapy with radiation, surgery, or both. Considerable controversy still exists as to the optimal local treatment. Previous data from MD Anderson found that patients who had a response to induction chemotherapy benefited from the addition of mastectomy to chemotherapy and radiation.

Choose one answer only:

Question 1:

A 52 year old patient presented to the breast outpatient clinic with history of redness and hotness of the right breast dating since 2 months. Clinical examination revealed red, hot and edematous breast. The patient was sent for mammography which revealed diffuse inflammatory reaction within the breast with no definite masses but with enlarged and architecturally distorted ipsilateral axillary lymph nodes. Ultrasound guided FNAC was performed from the breast parenchyma of maximum inflammatory changes revealing inflammatory cells with no signs of malignancy. The advice to the patient will be:

- a) Reassurance of the patient with medical treatment by antibiotics
- b) Referral of the patient to the department of dermatology
- c) Redo FNAC by an expert pathologist obtaining adequate skin tissue
- d) Open biopsy
- e) None of the above

Question 2:

Regarding inflammatory breast cancer (IBC), all the following are correct except:

- a) Characterized by red, hot and edematous breast
- b) Elevated total leucocytic count above the normal range
- c) Subdermal lymphatic embolisation and lymphovenous shunt in the FNAC are characteristic of this disease
- d) Redness involves more than 1/3 of the breast
- e) Two clinical subtypes are identified, the true IBC and the pseudo IBC

Question 3:

Regarding the management of inflammatory breast cancer (IBC)

- a) Surgery should be the initial step in therapy for patients with IBC
- b) Initial chemotherapy followed by surgery is the optimum for IBC patients
- c) Conservative breast surgery can be performed following response to neoadjuvant chemotherapy
- d) The most important prognostic factor is the size of the mass rather than the number of lymph nodes affected
- e) Immediate breast reconstruction is encouraged in this subset of patients