The role of Topoisomerase II-α (TOPO IIA) as a predictive factor for response to neoadjuvant anthracyclines based chemotherapy in locally advanced breast cancer.

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Abstract

BACKGROUND:
Topoisomerase II-α is a molecular target of anthracyclines; several studies have suggested that topoisomerase II-α expression is related to response to anthracycline treatment. The objective of this study was to evaluate if topoisomerase II-α overexpression predicts response to anthracycline treatment in locally advanced breast cancer patients.

MATERIAL AND METHODS:
This prospective study included 50 patients with primary non metastatic locally advanced breast cancer according to American Joint Committee For Cancer Staging (T3-4;N0-3) were treated between January 2012 and Jaune 2012 at Clinical Oncology Department, Tanta University Hospital.
Topoisomerase II-α, HER2, estrogen receptor (ER), progesterone receptor (PR) expression and KI-67 were evaluated by immunohistochemistry in formalin-fixed, paraffin-embedded breast tumors from 50 patients presenting with locally advanced breast cancer.

RESULTS:
Tumors from 50 patients, 45 (90%) showed topoisomerase II-α overexpression, patients 34 (68%) for ER positive, 32 (64%) for PR positive and 10 (20%) for HER2 overexpression and 16 (32%) for high KI 67.

Significant correlation between clinical and pathological response with topo IIA, HER2 and KI-67. p value (≤0.001), (0.005) and (0.015) respectively.

1-Responders :

- Clinical (CR): 3 patients had co-expression of topo II and HER2, hormonal receptor negative and high KI-67.
- Clinical(PR):43 patients majority of them had topo IIA overexpression .fig(9-10)

2-Non responders :

4(8%) patients all had negative (TOPOII/HER2), low KI-67and 2 had hormonal receptor positive and another 2 had hormonal receptor negative.
CONCLUSIONS:
Our data support a correlation between topoisomerase II-α expression in locally advanced breast cancer patients and improved clinical benefit with neoadjuvant anthracyclines based therapy.

BIOGRAPHY:
I am a medical oncologist and work in aswan university hospital as assistant lecturer. I concerned in management of gynecological cancer especially breast and ovarian cancer. My research focus in detection of biomarkers for chemotherapy sensitivity or resistancy in both breast and ovarian canc