Tumor Infiltrating Lymphocytes As A Prognostic
And Predictive Factor For Neoadjuvant Chemotherapy in Triple Negative breast Cancer

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Introduction: TNBC is a subtype of breast cancer that shows minimal or no immunohistochemical expression of estrogens receptor (ER), progesterone receptor (PR) and human epidermal growth factor receptor 2 (HER2), & accounts for ~12% of invasive breast cancers There is association between response to chemotherapy and the extent of the local immune reaction within the TNBC indicating tumor-infiltrating lymphocytes as predictive markers for response to neoadjuvant chemotherapy. Tumor infiltrating lymphocytes (TILs) are associated with increased pathological complete response (pCR), longer disease-free survival, and improved overall survival (OS).
Aim of study: Comparative study between paclitaxel and doxorubicin versus paclitaxel and carboplatin as neoadjuvant chemotherapy in stage II &IIITNBC with evaluation of TIL as prognostic and predictive factor
Patients and methods: This retrospective study included 40 patients with TNBC stage II, III treated with NAC including 20 patients treated with paclitaxel and doxorubicin(Group A) and 20 patients treated with paclitaxel and carboplatin (Group B) who presented at Clinical Oncology and Nuclear Medicine Department Tanta University Hospitals and Oncology Department of Health Insurance hospitals throughout the period from January 2011 to December 2015. Routine H&E staining was done for TILs in pre-chemotherapy specimen and classified into: Low sTILs : tumor with no or minimal immune infiltrates (<10 % stromal TILs);Moderate sTILs: tumor with intermediate or heterogeneous infiltrates (10-40 % stromal TILs);High sTILs: tumor with high immune infiltrates (>40 % stromal TILs). CD3 and CD8 testing was done for detected TILs.
Results: Positive significant correlation was found between the 2 groups as regard sTILs IHC and CD3 but not CD8. Most patients had moderate lymphocytic infiltration by IHC,CD3 and CD8 in group A, while in group B most patients had low lymphocytic infiltration, as shown in table 4. Significant difference between the two groups was found as regard TILs by IHC (P=0.044) and CD3 (P=0.014) but not CD8 (P=0.064). Overall response (OAR) was 90% (18/20) , 75%(15/20) in group A, B respectively.Of total 40 patients, 9 patients (22.5%) achieved pCR including 8 (40% of group B) patients in group B and 1 patient (5% of group A) in group A which was statistically significant (P=0.004). There were no significant differences for pathological response as regard age, performace status, tumor size, lymph nodes status, stage, multifocality, LVI, KI67 or surgery type, while it was statistically significant with sTILs IHC, CD3,CD8 and treatment groups. Five-year OS was 80%, 94.7%,100% in low, moderate and high sTILs by IHC respectively, but it was not statistically significant (P= 0.160). About 83.3% in low sTILs CD3, 94.1% in moderate, 100% in high groups achieved 5-year OS but it was not statistically significant (P= 0.271). Five-year OS was 81.8%, 94.1%,100% in low, moderate and high sTILs by CD8 respectively, and it was statistically insignificant (P= 0.210)
Conclusion: TILs represent an important predictive and prognostic biomarker in patients with breast cancer.

Keywords: TNBC, s TIL, neoadjuvant