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breast cancer

F27 Tumor infiltrating lymphocytes in triple negative breast cancer and correlations with prognosis

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Background: Following the development of drugs reactivating the immune system, the need to identify immunological markers that can provide prognostic and predictive information is rapidly increasing. This is mainly relevant in triple negative breast cancers, due to their immunogenic potential. Tumor infiltrating lymphocytes (TILs) have been claimed as possible biomarkers of such immune activation, and we investigated their correlation with prognosis.

Material and methods: We retrospectively quantified the stromal TILs in 71 triple negative breast cancer patients (pts) surgically treated. TILs were stained with hematoxylin and eosin and were analyzed according to recommendations of TILs Working Group Consensus. TILs were classified as low if ≤ 10% (L-TILs), as intermediate between 10 and 40% (I-TILs) and as high if > 40% (H-TILs). TILs subsets were correlated with TNM stage, proliferative activity, vascular invasion, adjuvant treatment and disease outcome (DFS and OS). Finally we analyzed the influence of TILs on DFS and OS in 43 TN pts with very bad prognostic factors, defined as pT > 5 cm, pN ≥ 2, presence of vascular invasion and proliferative activity ≥ 70%.

Results: Twenty-two pts had L-TILs (31%), 13 pts I-TILs (18.3%) and 36 pts had H-TILs (50.3%). Seventeen pts (23.9%) had disease recurrence, 8 of which at nervous central system. Among TILs subgroups, disease progression occurred more frequently in L-TILs pts (63.6% (mDFS), and in I-TILs (53.8%) than in H-TILs (7.3%). Median DFS was 15.1 mos (95%IC 9.7-20.5) in L-TILs, 56.3 mos (26.5-86.1 mos) in I-TILs and was not reached in H-TILs. Similarly, mOS was 29.3 mos in L-TILs, 74.1 mos in I-TILs and not reached in H-TILs ($p < 0.0001$).Multivariate analysis showed that TILs subsets constitute an independent prognostic factor for both DFS (HR 0.343, $p = 0.006$) and OS (HR 0.475, $p = 0.009$).Also among the 43 TN pts with bad prognostic factors, 66.7% in L-TILs pts showed disease progression, 62.5% in I-TILs pts and 0% in H-TILs pts ($p < 0.0001$).

Conclusions: Our study confirms that stromal TILs subsets, evaluated with hematoxylin and eosin, are independent prognostic factors in triple negative breast cancer patients, with H-TILs subset being associated with a favourable outcome. Moreover, the prognostic value of TILs is maintained even in pts with more unfavorable prognosis, based on classical clinico-pathological features. The adjuvant strategy in TN breast cancer with H-TILs should be re-evaluated.