

Expression of MTSS1, RPL37A, HTRA1 and its relationship with the complete pathological response and survival in patients with locally advanced breast carcinoma submitted to neoadjuvant chemotherapy.

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Background: Neoadjuvant chemotherapy (NC) has the same results in terms of survival, compared to adjuvant chemotherapy. The complete pathologic complete (CPR) is heterogeneous and it is an important prognostic factor after NC. Molecular classification is related to RPC and survival, but it is important to evaluate new markers. Previous Brazilian published showed that three genes (MTSS1, HTRA1, RPL37A) were related to response to NC, but more studies are necessary. The MTSS1 and HTRA1 are tumor suppressors. Decreased MTSS1 expression is associated with more aggressive behavior and HTRA1 is associated with more aggressive behavior.

Hypothesis: MTSS1, HTRA1, RPL37A are related to CPR and survival in patients undergoing NC.

Methods: A retrospective study of 338 cases of patients with locally advanced breast cancer (LABC) submitted to QTN using the scheme based on anthracycline and taxane. Clinical, pathologic data and immunohistochemistry evaluation were performed. The evaluation of these markers was quantitative, adding to the cellularity with intensity, so that the final values ranged from 0 to 6. Two pathologists evaluated these markers (CNS, LFAM). Chi-square was used to evaluate the association and Kaplan Meier method with log rank test was used to evaluate the survival.

Results: Evaluating these markers we separate the groups comparing cutoff points that presented the best correlation with the PRC or survival (Table 1). In this context it was considered to MTSS1, RPL37A negative values 0-3, and the other positive. Regarding the HTRA1-PRSS11 considered negative values 0-4, and the other positive. Table 1 summarizes the results of survival by log rank method. The presence of RPL37A expression was related to the PRC. The HTRA1 expression was not related to overall survival.

Table 1. Different cut points related to the CPR and survival

	Negative	PCR (χ^2)	OS (log rank)
MTSS1	0 a 2	0.16	0.44
MTSS1	0 a 3	0.64	0.54
MTSS1	0 a 4	1.00	0.72
RPL37A	0 a 2	0.06	0.37
RPL37A	0 a 3	0.03	0.43
RPL37A	0 a 4	1.00	0.98
HTRA1	0 a 2	0.22	0.41
HTRA1	0 a 4	0.53	0.09

OS = Overall survival

Conclusion: The only factor related to the PRC was RPL37A, not observing relationship of the markers with survival.

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