The detection of circulating tumor cells (CTCs) in patients with breast cancer (BC) is associated with increased risk of metastatic dissemination and death (1). Toll-like receptor 4 (TLR4) and phosphorylated signal transducer and activator of transcription protein 3 (pSTAT3) were characterized using the Ariol system (x400). The detection of CK+ CTCs was predominant in patients with metastatic BC (mBC) harboring mBC (33.2% vs 23.1%; p=0.033) and pSTAT3+ CTCs (20.8% vs 12.6%; p=0.014). The detection of CK+ CTCs was predominant in patients with metastatic BC (33.2% vs 23.1%; p=0.033), and the presence of TLR4+ CTCs was associated with shorter OS (median: 19.0 vs 60.8 months; p=0.001). These results provide first evidence on the expression of TLR4 and pSTAT3 at the CTC level in breast cancer (BC) with clinical relevance, implying that TLR4/STAT3 signaling pathways may have a role in BC progression. CTC detection and phenotyping according to TLR4 and pSTAT3 expression could serve for the refinement of prognosis in mBC.

CONCLUSIONS

- These results provide first evidence that the expression of TLR4 and pSTAT3 at the CTC level has clinical relevance in breast cancer (BC), implying that TLR4/STAT3 signaling pathways may have a role in BC progression.
- CTC detection and phenotyping according to TLR4 and pSTAT3 expression could serve for the refinement of prognosis in mBC.

REFERENCES


#570 - Investigation of TLR4 and pSTAT3 expression on circulating tumor cells (CTCs) in patients with metastatic breast cancer (mBC)

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BACKGROUND

TLR4+ and/or pSTAT3+ CTCs were detected in 19 out of 100 patients, TLR4+ CTCs and pSTAT3+ CTCs were detected in 11% and 14% of patients, respectively, and the presence of TLR4+ CTCs was predominant in patients with metastatic BC (33.2% vs 23.1%; p=0.033). The detection of CK+ CTCs was predominant in patients with metastatic BC (33.2% vs 23.1%; p=0.033), and the presence of TLR4+ CTCs was associated with shorter OS (median: 19.0 vs 60.8 months; p=0.001). These results provide first evidence on the expression of TLR4 and pSTAT3 at the CTC level in breast cancer (BC) with clinical relevance, implying that TLR4/STAT3 signaling pathways may have a role in BC progression. CTC detection and phenotyping according to TLR4 and pSTAT3 expression could serve for the refinement of prognosis in mBC.

OBJECTIVES

To characterize CTCs from patients with metastatic breast cancer (mBC) according to TLR4 and pSTAT3 expression, in order to investigate:
- a) the incidence of TLR4 and pSTAT3 expression on individual CTCs,
- b) the clinical relevance of TLR4 and/or pSTAT3 expressing CTCs in mBC.

RESULTS

- TLR4+ and/or pSTAT3+ CTCs were detected in 19 out of 100 patients, TLR4+ CTCs and pSTAT3+ CTCs were detected in 11% and 14% of patients, respectively, whereas 18% of patients harbored TLR4+ and/or pSTAT3+ CTCs (Figure 1A).
- TLR4+ CTCs and pSTAT3+ CTCs represented the 46% and 64% of total CK+ CTCs. Co-expression of the two markers was observed in 39% of CTCs (Figure 1B).

CONCLUSIONS

- These results provide first evidence that the expression of TLR4 and pSTAT3 at the CTC level has clinical relevance in breast cancer (BC), implying that TLR4/STAT3 signaling pathways may have a role in BC progression.
- CTC detection and phenotyping according to TLR4 and pSTAT3 expression could serve for the refinement of prognosis in mBC.

REFERENCES