Circulating tumor cells in blood of primary breast cancer patients assessed by a novel RT-PCR test kit and comparison with status of bone marrow-disseminated tumor cells.

Abstract:
In breast cancer, circulating tumor cells (CTCs)/disseminated tumor cells (DTCs) may serve as independent adverse prognostic variables, to monitor the course of the disease and to predict response or failure to cancer therapy. Most of the techniques to enumerate DTCs in the bone marrow or CTCs in the bloodstream of breast cancer patients rely on a combination of an enrichment step and a detection step. A novel RT-PCR method, the AdnaTest BreastCancer kit, was developed for the enrichment of CTCs from peripheral blood of breast cancer patients followed by identification of CTC-associated marker transcripts by reverse transcription and PCR. Although this test has been demonstrated to identify breast cancer patients at risk, standardization of this technique and direct comparison with other established breast cancer CTC enrichment and detection techniques is still lacking, but highly needed. This is done best within prospective clinical trials, such as in the ongoing DETECT, SUCCESS, and BR-01-2004 trials.