Prospective multi-center study for quantification of chemotherapies and CTX-related direct medication costs avoided by use of biomarkers uPA and PAI-1 in primary breast cancer.

Biomarkers uPA/PAI-1 as recommended by ASCO and AGO are used in primary breast cancer to avoid unnecessary CTX in medium risk-recurrence patients. This study verified how many CTX cycles and CTX-related direct medication costs can be avoided by uPA/PAI-1 testing. A prospective, non-interventional, multi-center study was performed among six Certified Breast Centers to analyze application of uPA/PAI-1 and consecutive decision-making. CTX avoided were identified and direct costs for CTX, CTX-related concomitant medication and febrile neutropenia (FN) prophylaxis with G-CSF calculated. In n = 93 breast cancers n = 35 CTX (37.6%) with 210 CTX cycles were avoided according to uPA/PAI-1 test result. uPA/PAI-1 testing saved direct medication costs for CTX of 177,453 EUR, CTX-related concomitant medication of 27,482 EUR and FN prophylaxis of 20,599 EUR, overall 225,534 EUR. At test costs at 287.50 EUR uPA/PAI-1 testing resulted in additional costs of 26,737.50 EUR. uPA/PAI-1 has proven to be cost-effective at a return-on-investment ratio of 8.4:1. Indirect cost savings further increase this ROI. These results support decision-making for cost-effective diagnostics and therapy in breast cancer.