MINDACT: Long-term results of the large prospective trial testing the 70-gene signature MammaPrint as guidance for adjuvant chemotherapy in breast cancer patients.

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Abstract Disclosures

Research Funding:
MINDACT was supported by grants from the European Commission Framework Programme VI (FP6-LSHC-CT-2004-503426, "TRANSBIG Network of Excellence"), the Breast Cancer Research Foundation, the U.S. National Cancer Institute, the European Breast Cancer Council-, Pharmaceutical/Biotech Company, U.S. National Institutes of Health

Background:
The 70-gene signature MammaPrint has been shown to identify breast cancer patients for whom adjuvant chemotherapy (CT) could be safely omitted even in the presence of unfavorable standard clinical-pathological criteria. The MINDACT primary endpoint at 5 years median follow-up was met in 2016 (Cardoso et al, NEJM 2016) with a distant metastasis free survival (DMFS) rate at 5 years of 94.7% (95% CI: 92.5-96.2) in clinical high (C-High) / genomic low (G-Low) risk patients who received no CT. Longer follow-up is now

available.

Methods:
6693 patients were enrolled in the prospective phase III randomized MINDACT study (EORTC 10041/BIG3-04) between 2007-2011. We assessed the DMFS rate at 5 years in the primary test (PT) population of C-High / G-Low patients who were randomized to receive no CT (n = 644). As secondary analysis, we evaluated DMFS and overall survival (OS) in the intention to treat (ITT) population of the C-High / G-Low group randomized to CT vs no CT (n = 749 and 748 respectively). Comparisons between CT and no CT groups are low-powered. We used Kaplan-Meier estimates for time to event endpoints and hazard ratios (HR) with 95% CI from cox-regression models adjusted for stratification factors used for the randomization.

Results:
The median follow-up is 8.7 years, resulting in an updated 5-year DMFS rate for the PT population of C-High / G-Low patients with no CT of 95.1% (95% CI 93.1-96.6). The updated outcomes of the ITT population of C-High / G-Low patients are shown in the table. Further analyses will update the suggested age-dependent effect of CT omission for luminal breast cancer seen at 5 years in pre- versus post-menopausal women as in Tailor-X (Piccart et al, SABCS 2019).

Conclusions:
The primary DMFS endpoint at 5 years continues to be met in CT untreated C-High / G-Low risk women, confirming MINDACT as a positive de-escalation study. With longer follow-up and in line with the natural history of luminal breast cancer, more distant relapses do occur but the estimated gain of 2.6% for CT administration in C-High / G-Low patients remains small in light of CT harmful effects. The level IA evidence for the clinical utility of the 70-gene signature for adjuvant CT decision making is maintained. Clinical trial information: NCT00433589.

C-High / G-Low patients (ITT population): updated outcomes

	DMFS with CT	DMFS without CT
At 5 years (95% CI)	95.7% (93.9-96.9)	94.8% (92.9-96.2)
At 8 years (95% CI)	92.0% (89.6-93.8)	89.4% (86.8-91.5)
	OS with CT	OS without CT
At 8 years (95% CI)	95.7% (93.9-97.0)	94.3% (92.2-95.8)