Effectiveness of taxane- or anthracycline-based compared to taxane- and anthracycline-free first-line treatments of patients with metastatic breast cancer treated by German office-based medical oncologists.

Data from the TMK Registry Group

Marschner N[1], Dörfel S[2]; Meyer D[3]; Petersen, V[4]; Frank M[5]; Jänicke M[5] and Tesch H[6] for the TMK Registry Group

[1] Praxis für Interdisziplinäre Onkologie und Hämatologie, Freiburg i. Br., [2] Onkozentrum, Dresden; [3] Hämatologisch-Onkologische Schwerpunktpraxis, Göttingen; [4] Onkologische Praxis, Heidenheim; [5] iOMEDICO, Freiburg i. Br.; [6] Onkologische Gemeinschaftspraxis, Frankfurt a. M.

Introduction

Taxanes and anthracyclines (T/A) are frequently used in the treatment of patients with breast cancer. However, both substance classes are associated with significant toxicities, which adversely affect the patient's quality of life. Here, we present data on the real-life effectiveness of T/A-based and T/A-free first-line treatments in patients with metastatic breast cancer (mBC).

Patients and methods

The Tumour Registry Breast Cancer (TMK) is an ongoing, prospective, national, multicentre observational study conducted by a network of currently 295 office-based medical oncologists in Germany. Since 2007 more than 3700 patients have been recruited.

Patients with histologically confirmed breast cancer and signed informed consent can be included at the start of systemic curative or palliative first-line treatment. Besides patient and tumour characteristics, all systemic therapies and outcome data are recorded until the patient's death or for a maximum of five years. There are automated plausibility and completeness checks, and subsequently generated queries by the electronic data capture system. In addition, data managers regularly check for plausibility and issue queries. The study is registered with ClinicalTrial.gov (NCT01351584).

Overall survival (OS) was estimated by the Kaplan-Meier-method in patients who received T/A-based and T/A-free chemotherapy as first-line treatment. The impact of potentially confounding variables was analysed by multivariate Cox regression.

Results

451 patients received T/A-based and 391 patients T/A-free regimens. The majority of T/A-free regimens (80%) contained vinorelbine, capecitabine or combinations of both substances. Age at the start of treatment (Ø 62 years), disease free interval (Ø 60 months), body mass index (Ø 26.0), Charlson Comorbidity Index (Ø 0.5), hormone receptor (70% positive) and Her2/neu receptor status (28% positive) did not differ (p>0.05) between both groups (Table 1). Patients in the T/A group more often had synchronous metastases (34% vs. 23%, p = 0.005).

Table 1 Patient characteristics

	All patients	A/T-based first-line	A/T-free first-line	p value
Number of patients	842	451	391	
Age at start of treatment (years) - mean [±std]	61.5 [±11.61]	61.0 [±11.40]	62.2 [±11.82]	0.119
Body mass index – mean [±std]	26.4 [±5.56]	26.3 [±5.9]	26.5 [±5.18]	0.572
Comorbidity (Charlson Comorbidity Index) - mean [±std]	0.5 [±1.24]	0.5 [±1.3]	0.49 [±1.121]	0.719
Disease-free interval (months) - mean [±std]	60.4 [±71.22]	57.8 [±70.1]	63.3 [±72.5]	0.270
Her2/neu receptor status: positive - n [%]	237 [28.1%]	121 [26.8%]	116 [29.7%]	0.788
Her2/neu receptor status: negative - n [%]	490 [58.2%]	266 [59.0%]	224 [57.3%]	
Her2/neu receptor status: unknown - n [%]	115 [13.7%]	64 [14.2%]	51 [13.1%]	
Hormonereceptor status: positive - n [%]	592 [70.3%]	313 [69.4%]	279 [71.4%]	0.439
Hormonereceptor status: negative - n [%]	183 [21.7%]	97 [21.5%]	86 [22.0%]	
Hormonereceptor status: unknown - n [%]	67 [8.0%]	41 [9.1%]	26 [6.6%]	
Asynchronous metastases: M0 at primary diagnosis - n [%]	479 [56.9%]	240 [53.2%]	239 [61.1%]	0.005
Synchronous metastases: M1 at primary diagnosis - n [%]	242 [28.7%]	152 [33.7%]	90 [23.0%]	
State of metastases at primary diagnosis unknown: MX - n [%]	121 [14.4%]	59 [13.1%]	62 [15.9%]	

Estimated median OS did not differ between the T/A-based group and the T/A-free group (p=0.52). Median follow-up was 38.4 months (Figure 1).

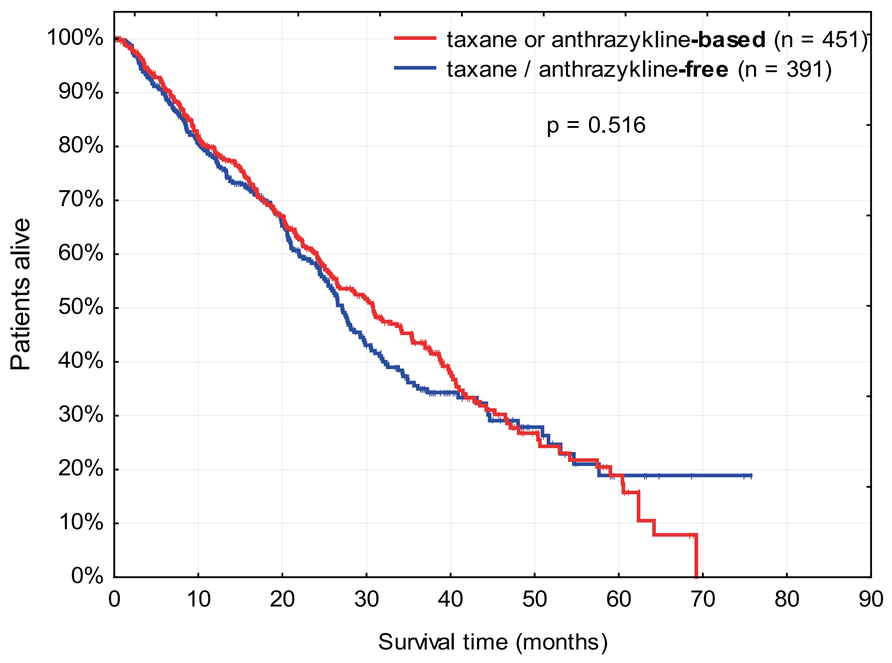

Figure 1 Overall survival after start of first-line therapy

In a multivariate cox regression model adjusting for all factors listed above, type of first-line regimen (T/A-based vs T/A-free) had no impact on OS (p=0.71). Higher body mass index, positive hormone receptor status, positive HER2/neu receptor status and synchronous metastases had a positive impact on OS. Older age at the start of treatment and presence of comorbidity had an negative impact on OS (Table 2).

Table 2 Multivariate cox regression

	Hazard ratio	95% CI	p value
Negative impact on overall survival			
Comorbidity (Charlson Comorbidity Index): higher	1.123	1.051-1.199	0.001
Age at start of therapy: older	1.018	1.009-1.028	< 0.001
Positive impact on overall survival			
Body mass index: higher	0.968	0.948-0.988	0.002
Disease-free interval (months): longer	0.997	0.995-0.999	0.003
Her2/new receptor status: positive	0.588	0.465-0.744	< 0.001
Hormonereceptor status: positive	0.775	0.611-0.983	0.036
Synchronous metastases at primary diagnosis	0.577	0.441-0.754	< 0.001
No impact on overall survival			
First-line therapy: T/A-free vs. T/A-based	1.038	0.851-1.266	0.715

Although synchronous metastases had a positive prognostic impact on survival and more patients in the T/A-based group had synchronous metastases, this did not result in longer overall survival.

Conclusions

Palliative first-line treatments with T/A-free regimens result in similar OS as T/A-based regimens in patients with mBC treated by German office-based medical oncologists. T/A-free regimens could provide a promising alternative to T/A-based first-line treatments, especially if the patient's quality of life is less affected.

Recent results from the randomised, phase III TURANDOT trial confirm these data (Lang et al., 2013). Further research should aim to identify patients who benefit most from T/A-based first-line treatments and to assess the most effective T/A-free regimens.

In Collaboration with:

AKS Arbeitskreis klinische Studien e.V.

AIO

Reference:
Lang I, Brodowicz T, Ryvo L, et al: Bevacizumab plus paclitaxel versus bevacizumab plus capecitabine as first-line treatment for HER2-negative metastatic breast cancer: interim efficacy results of the randomised, open-label, non-inferiority, phase 3 TURANDOT trial. Lancet Oncol 14:125–133, 2013.

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