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LOW-DOSE METRONOMIC CHEMOTHERAPY AS AN EFFICIENT TREATMENT OPTION IN METASTATIC BREAST CANCER – CASE-CONTROL STUDY

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Introduction and purpose

There is a growing importance of low-dose metronomic chemotherapy (LDMC) in metastatic breast cancer (MBC). In this retrospective case-control-analysis we compared the efficacy of LDMC and conventional chemotherapy in MBC.

Methods

Each LDMC patient receiving oral cyclophosphamide (CTX) (50 mg daily) and methotrexate (MTX) (2.5 mg every other day) was matched with two patients who received conventional chemotherapy. Age, number of chemotherapy lines and metastatic lesions as well as hormone receptor (HR) status were considered as matching criteria. Primary endpoint was disease control rate greater than 24 weeks (DCR). Secondary endpoints were progression-free survival (PFS), duration of response (DoR) and subgroup analyses using the matching criteria.

Results

A total of 40 cases and 80 controls entered the study. 30% patients with LDMC and 23% patients with conventional chemotherapy showed DCR (p=0.380). The median PFS was 12.5 weeks in both groups (p=0.218). The median DoR was 31.0 weeks in LDMC and 20.5 weeks in the control group (p=0.383). Among younger patients DCR was 40% in LDMC vs. 25% in the control group (p=0.249). In addition, DCR was achieved in 33% vs. 26% patients with ≤ 2 chemotherapy lines (p=0.568) and in 36% vs. 18% patients with ≤ 2 different metastatic lesions (p=0.096), respectively. In the triple negative group 30% LDMC vs. 5% control patients showed DCR (p=0.095).

Conclusions

In this retrospective case-control study we demonstrated a similar efficacy of LDMC compared to conventional chemotherapy in the treatment of MBC. Moreover, no significant differences were found in the subgroups studied. Therefore, the concept of LDMC may also be a treatment option in both younger and non-heavily pre-treated MBC patients who do not need rapid remission.

* Parts of the presented results derive from the doctoral thesis of Ms. Carola Schnatz.

Table 1: Patient characteristics

	LDMC	control	p
median age at begin of therapy (range) (years)	63.5 (35-83)	61.0 (30-81)	0.230
median age at FD MBC (range) (years)	59.0 (33-82)	58.5 (28-81)	0.544
median age at FD BC (range) (years)	50.5 (29-80)	51.5 (26-79)	0.506
age at begin of therapy			
younger	20 (50.0 %)	40 (50.0 %)	1.000
elderly	20 (50.0 %)	40 (50.0 %)	
chemotherapy line			
non-heavily pretreated	21 (52.5 %)	42 (52.5 %)	1.000
heavily pretreated	19 (47.5 %)	38 (47.5 %)	
metastases			
no multiple metastases	25 (62.5 %)	50 (62.5 %)	1.000
multiple metastases	15 (37.5 %)	30 (37.5 %)	
hormone receptor status			
positive	30 (75.0 %)	60 (75.0 %)	1.000
negative	10 (25.0 %)	20 (25.0 %)	

Figure 1: Localisation of metastatic lesions (n)

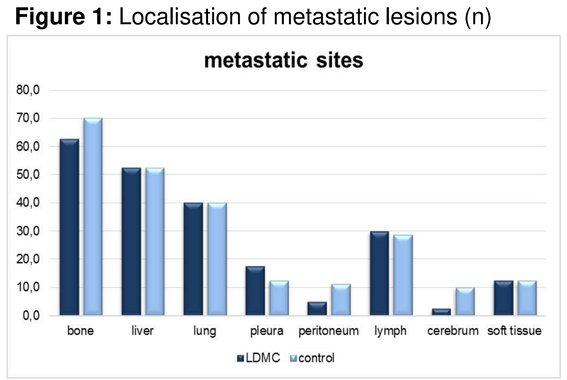

Figure 2: Chemotherapeutics in the control group (%)

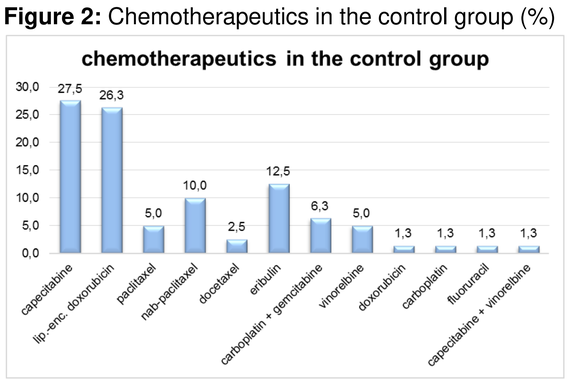

Table 2: Therapy response after 24 weeks

		LDMC	control	p
		n= 40	n= 80	
Disease Control Rate		12 (30.0 %)	18 (22.5 %)	0.380
therapy response after 24 weeks	PD	28 (70.0 %)	62 (77.5 %)	
	SD	5 (12.5 %)	15 (18.8 %)	
	PR	6 (15.0 %)	3 (3.8 %)	
	CR	1 (2.5 %)	0 (0.0 %)	
median PFS (range) (weeks)		12.5 (6-86)	12.5 (4-100)	0.218
therapy response (%)		15 (37.5 %)	24 (30.0 %)	0.417
median duration of response (range) (weeks)		31.0 (12-74)	20.5 (12-88)	0.383

Figure 3a: DCR in subgroups (%), **3b:** median PFS in subgroups (weeks)