

# Efficacy of Mat Pilates in improving quality of life in women submitted to adjuvant radiotherapy for breast cancer treatment

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## Background

The breast cancer is the most frequent type of neoplasm among women. The local treatment for breast cancer is surgery and radiotherapy. Radiation therapy may involve important physical and psychological adverse effects that may affect the quality of life of these women requiring the attention of the multidisciplinary team. Physical activity is an important quality of life predictor and should be started early in patients submitted to radiotherapy with the aim of reducing their toxicities.

## Objective

To analyze the efficacy of Mat Pilates in improving the quality of life of women submitted to adjuvant radiotherapy at Cancer Hospital III/ National Cancer Institute (HCIII/INCA).

## Methods

Randomized clinical trial in women diagnosed with breast cancer, aged 18 years or over, with indication of adjuvant radiotherapy to be performed exclusively at HCIII/INCA. Eligible patients are randomly allocated to the intervention and control groups. The intervention group is submitted to two weekly sessions of Mat Pilates and home exercises for upper limbs according to the institutional routine for 5 weeks (radiotherapy period) and the control group only performs routine home exercises. The sociodemographic, clinical and treatment data are collected based on the electronic and physical records of the institution. Quality of life is assessed by EORTC QLQ C-30 and EORTC QLQ – BR23 questionnaires (specific for breast cancer). It will be necessary 184 patients (92 per group) according to the account of the sample size.

## Current project situation

This trial is in the recruiting process and typing the database. To date, 90 women were randomized and the data of 71 women were entered. Sociodemographic and treatment data are shown in table 1 and table 2 shows the mean of the questionnaires results. The women mean age was 53, 2 ( $\pm 12,06$ ), the majority of them were married (57,7%), with more than 8 years of study (69%) and were engaged in domestic activities (69%). Regarding the clinical variables, the majority presented advanced clinical stage (55,7%), was submitted to neoadjuvant chemotherapy (56,3%) and mastectomy (50,7%). The Invasive Ductal Carcinoma was the most frequent histological type (88,7%). In the questionnaires, the symptoms presenting the highest averages were: Fatigue (19,35 $\pm$ 24,39), Pain (21,36 $\pm$ 26,29), Insomnia (32,36 $\pm$ 39,44), Constipation (24,86 $\pm$ 37,68), Systemic therapy side effects (81,99 $\pm$ 14,61), Breast and Arm symptoms (respectively, 12,99 $\pm$ 13,22 and 14,82 $\pm$ 19,04).

Table 1. Prevalence of patient characteristics.

	N	%
<b>Skin color</b>		
White	23	32,4
Others	48	67,6
<b>Marital Status</b>		
Married	41	57,7
Not Married	30	42,3
<b>Education</b>		
$\geq 8$ years	49	69,0
$< 8$ years	22	31,0
<b>Current Occupation</b>		
Home activity	49	69,0
Other	22	31,0
<b>Family Income</b>		
$> 1$ basic salary	49	69,0
$\leq 1$ basic salary	22	31,0
<b>Smoking</b>		
No	51	71,8
Former smoker	15	21,1
Smoker	5	7,0
<b>Clinical Staging</b>		
0 / I / IIA	31	44,3
IIB / IIIA	22	31,4
IIIB / IIIC	17	24,3
<b>Chemotherapy</b>		
No	12	16,9
Neoadjuvant	40	56,3
Adjuvant	19	26,8
<b>Target Therapy</b>		
No	64	90,1
Neoadjuvant	5	7,0
Adjuvant	2	2,8
<b>Hormone Therapy</b>		
No	11	15,5
Neoadjuvant	26	36,6
Adjuvant	34	47,9
<b>Type of Surgery</b>		
Segmentectomy	35	49,3
Simple Mastectomy	14	19,7
Radical Mastectomy	22	31,0
<b>Axillary Intervention</b>		
Sentinel Lymph Node Biopsy	38	53,5
Axillary Dissection	33	46,5
<b>Histologic Type</b>		
DCIS / LCIS	2	2,8
ILC	4	5,6
IDC	63	88,7
Others	2	2,8
<b>Radiotherapy</b>		
Breast / Chest wall	21	29,6
Breast / Chest wall and Supraclavicular	39	54,9
Breast / Chest wall and Supraclavicular and axilla	10	14,1

Table 2. Mean and standard deviation of continuous variables.

	Mean	St.Deviation
<b>Age</b>	53,2	12,06
<b>EORTC QLQ-C30</b>		
Global Health Status	76,85	16,64
<b>Functional Scales</b>		
Physical Functioning	86,28	12,73
Role Functioning	80,02	29,37
Emotional Functioning	69,35	28,35
Cognitive Functioning	74,05	28,17
Social Functioning	78,54	29,20
<b>Symptom Scales</b>		
Fatigue	19,35	24,39
Nausea and vomiting	3,76	11,68
Pain	21,36	26,29
Dyspnoea	7,97	18,23
Insomnia	32,36	39,44
Appetite Loss	7,50	20,46
Constipation	24,86	37,68
Diarrhoea	4,68	17,16
Financial Difficulties	36,6	39,52
<b>EORTC QLQ-BR23</b>		
<b>Functional Scales</b>		
Body Image	76,31	29,51
Sexual Functioning	30,31	29,87
Sexual Enjoyment	58,33	35,17
Future Perspective	44,14	37,31
<b>Symptom Scales</b>		
Systemic therapy side effects	81,99	14,61
Breast symptoms	12,99	13,22
Arm symptoms	14,82	19,04
Upset by hair loss	8,33	16,55