Prevalence and Impact of Treatment-Related Pain on Quality of Life in Brazilian Breast Cancer Patients

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Introduction

- Breast cancer (BC) remains the most common malignancy among women. Despite advances in treatment most patients continue to experience treatment-related adverse effects that significantly impact their quality of life(QoL).
- In Brazil, data on chronic pain in BC post curative treatment remains limited and this evidence is crucial for understanding treatment-related chronic pain, their impact on quality of life and

Objective and Methods

- Prevalence and Impact of Treatment-Related Pain on Quality of Life in Brazilian Breast Cancer Patients
- Cross-sectional study at Hospital das Clínicas, Universidade Federal de Goiás, Brazil (2022)
- Data collection for breast cancer curative intent surgery, clinical characteristics, treatment details and comorbidities.
- Pain assessment: World Pain Questionnaire (MPQ) and Visual Analogue Scale (VAS)
- Statistical analysis: Descriptive statistics, Pearson correlation, and regression analyses using R Studio v.4

Results

Table 1: Baseline Characteristics (n=122)

Characteristic	Value
Age (years), median (IQR)	55 (47-65)
BMI (kg/m²), median (IQR)	26.7 (24.5-30.8)
Mixed-race, n (%)	59 (48%)
Postmenopausal, n (%)	102 (84%)
Income >2 wages, n (%)	67 (55%)
Alcohol consumption, n (%)	13 (11%)
Hypertension, n (%)	48 (39%)
Diabetes, n (%)	21 (17%)
Hypothyroidism, n (%)	23 (19%)
Lymphedema, n (%)	24 (20%)

Table 4: Summary of Significant Associations

Variable	VAS (p)	McGill (p)	Direction of Effect
Wound Dehiscence	0.026*	0.011*	↑ Higher pain (both measures)
Mastectomy	0.0088*	0.186	↑ Higher VAS only
Lymphedema	0.0069*	0.124	↑ Higher VAS only
Radiotherapy	0.016*	0.098	↓ Lower VAS only
Hypertension	0.412	0.045*	↓ Lower McGill only

*p - value Statistic significant

Table 2: Clinical Variables Associated with VAS Pain Intensity

Clinical Variable	Group Comparison	n	VAS Median (IQR)	p-value
Surgical Procedure	Mastectomy	43	**6.5 (5-8)***	**0.0088**
	Breast-conserving surgery	79	5.0 (3-7)	
Lymphedema	Present	24	**7.0 (5-8)***	**0.0069**
	Absent	98	5.0 (3-7)	
Wound Dehiscence	Present	12	**7.5 (6-9)***	**0.026**
	Absent	110	5.0 (3-8)	
Radiotherapy	Received	99	**5.0 (3-7)***	**0.016**
	Not received	23	6.5 (5-9)	
Hypertension	Present	48	5.5 (3-8)	0.412
	Absent	74	5.5 (3-8)	
Diabetes	Present	21	6.0 (4-8)	0.287
	Absent	101	5.0 (3-8)	
Breast Reconstruction	Performed	65	5.5 (4-8)	0.523
	Not performed	57	5.5 (3-8)	

** Indicates significantly higher pain scores (p < 0.05). IQR = Interquartile Range. Bold p-values indicate statistical sianificance.*

Table 3: Clinical Variables Associated with McGill Total Score

Clinical Variable	Group Comparison	n	McGill Total Score Median (IQR)	p-value
Wound Dehiscence	Present	12	**36 (30-42)***	**0.011**
	Absent	110	29 (21-37)	
Hypertension	Present	48	**27 (20-35)***	**0.045**
	Absent	74	31 (23-39)	
Surgical Procedure	Mastectomy	43	31 (24-39)	0.186
	Breast-conserving surgery	79	29 (21-37)	
Lymphedema	Present	24	32 (25-40)	0.124
	Absent	98	29 (21-37)	
Radiotherapy	Received	99	29 (22-37)	0.098
	Not received	23	32 (24-41)	
Diabetes	Present	21	31 (23-38)	0.521
	Absent	101	30 (22-38)	
Breast Reconstruction	Performed	65	30 (23-38)	0.687
	Not performed	57	30 (21-37)	

** Indicates significantly different pain scores (p < 0.05). Red shading = higher pain; Green shading = lower pain. IQR = Interquartile Range.*

Discussion and Conclusion

Wound dehiscence emerged as the only factor significantly associated with increased pain in both VAS (p=0.026) and McGill (p=0.011) assessments, establishing it as the most critical predictor. Dehiscence leads to prolonged inflammation, ongoing tissue trauma, and delayed healing—all enhancing nociceptive input.

Mastectomy patients reported significantly higher pain than those with breast-conserving surgery (p=0.0088), reflecting greater tissue/nerve damage. Lymphedema presence also correlated with increased pain (p=0.0069), affecting 20% of patients.

Radiotherapy was associated with lower pain intensity (p=0.016), possibly reflecting patient selection bias or timing of assessment. Hypertension showed inverse correlation with McGill scores (p=0.045), potentially due to analgesic effects of antihypertensive medications or altered pain perception. These findings warrant further investigation.

Preoperative evaluation and early surgeries interventions may represent an important strategy to mitigate postoperative pain, particularly in patients at higher risk for wound complications or lymphatic dysfunction. These approaches warrant validation in clinically relevant subgroups and must account for disparities that influence treatment selection and postoperative trajectories. Future research should prioritize prospective prophylactic validation, elucidation of mechanisms underlying paradoxical associations, and the development of predictive models to guide personalized interventions that enhance survivorship care.

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