A Phase II Trial of Platelet-Rich Plasma for Breast Cancer Patients with Genitourinary Syndrome of Menopause

Melissa Curran[1], Tizeta M. Wolde[1], Jessica Firdman Moore[3], Grace Sierra[4], Natalie Paez[4], Laura Pla[4], Aida M. Van Mossel[5], Kristin E. Rojas[2,4]

[1]Graduate Medical Education, [2]Dewitt Daughtry Department of Surgery, [3]Department of Obstetrics & Gynecology,
[4]Sylvester Comprehensive Cancer Center, [5]Behavioral and Community-Based Research Shared Resource - Sylvester Comprehensive Cancer Center
University of Miami Miller School of Medicine, Miami, FL

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Background

Genitourinary syndrome of menopause (GSM) is a common yet underrecognized effect of endocrine therapy leading to sexual dysfunction in breast cancer survivors.

Vaginal hormones are the most effective treatment for GSM but are infrequently prescribed due to concerns regarding systemic absorption.

Platelet-rich plasma (PRP), derived from a patient's own blood and centrifuged to remove erythrocytes, delivers concentrated growth factors that promote tissue repair, angiogenesis, and collagen synthesis.

Objectives

Evaluate the safety and effectiveness of **vulvovaginal PRP injections** through:

- Change in GSM symptoms
- Change in vulvovaginal exam
- Change in patient-reported overall sexual function and sexual distress

Methods

Prospective non-randomized phase II pilot trial of female breast cancer patients with GSM between 2023-2025

Two sessions of vulvovaginal PRP injections given one month apart

- 4 cc of PRP created from 30 cc of whole blood collected by venipuncture using the Magellan Autologous Platelet Separator System
- PRP injected into the posterior vagina, vestibule, and posterior fourchette

Evaluated changes in:

- GSM symptoms using the **Vulvovaginal Symptom Questionnaire (VSQ)** – validated 21-item survey assessing 4 domains: symptoms, emotions, life impact, and sexual impact
- Vulvovaginal exam using the **Vaginal Health Index (VHI)**
- Global sexual function using the **Female Sexual Function Index (FSFI)** and **Female Sexual Distress Scale-Revised (FSDS-R)**

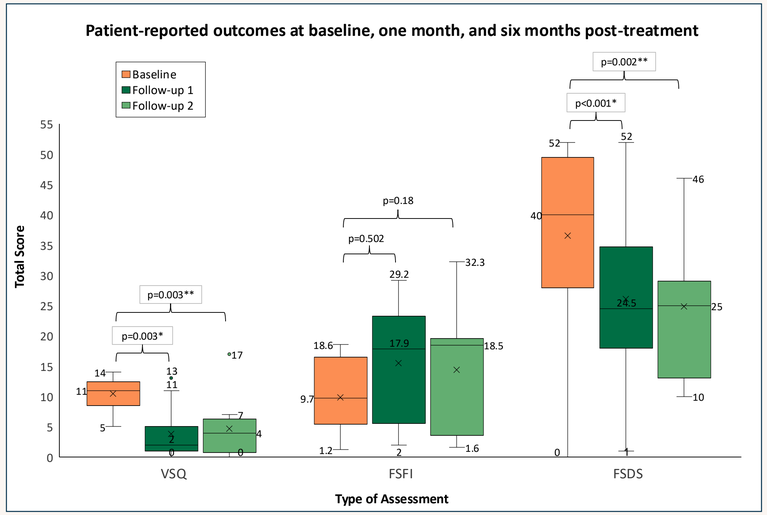
Paired T-tests compared mean score differences from baseline (T_0) to one month (T_1 – primary endpoint), and six months (T_2) post-treatment

Results

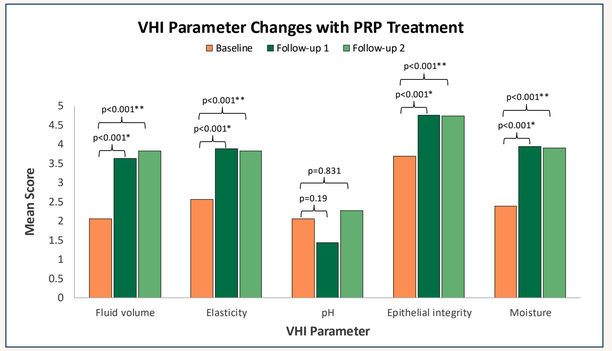
Table 1: Patient Demographics and Clinical Characteristics

	N (%)
Cis-gender female	18 (100)
Median age (range)	51.5 (38-66)
Race	
White	18 (100)
Ethnicity	
Hispanic	6 (33.3)
Non-Hispanic	12 (66.7)
Primary Language	
English	16 (88.9)
Spanish	2 (11.1)
Age at Cancer Diagnosis (range)	43.5 (35-62)
History of Hysterectomy	4 (22.2)
History of Oophorectomy	7 (38.9)
Hormone Replacement Therapy Use	
Yes	2 (11.1)
No	16 (88.9)
Breast Cancer Stage (anatomic)	
Stage I	6 (33.3)
Stage II	8 (44.4)
Stage III	3 (16.7)
Stage IV	1 (5.6)
Cancer Treatment	
Surgery	18 (100)
Chemotherapy	16 (88.9)
Radiation therapy	14 (77.8)
Endocrine therapy	18 (100)
Immunotherapy	1 (5.6)
Surgical Management	
Bilateral Mastectomy	13 (72.2)
Lumpectomy	5 (27.8)
Type of Adjuvant Endocrine Therapy	
Selective estrogen receptor modulator	7 (38.9)
Aromatase inhibitor	17 (94.4)
Ovarian suppression	5 (27.8)
CDK 4/6 inhibitor	2 (11.1)

Vulvovaginal **platelet-rich plasma (PRP)** is an **effective** and **durable non-hormonal treatment** for **breast cancer survivors** with GSM



VSQ: range from 0-20, lower scores denote less vulvovaginal symptom bother
FSFI: range from 2-36, higher scores denote improvement in sexual function
FSDS: range from 0-52, lower scores denote less distress
*statistically significant difference between T_0 and T_1
**statistically significant difference between T_0 and T_2



VHI: parameter range from 1-5, higher scores denote less vulvovaginal atrophy
*statistically significant difference between T_0 and T_1
**statistically significant difference between T_0 and T_2 (n=11)

Mean VSQ and FSDS-R significantly improved from T_0 to T_1 and remained significantly improved at T_2

Vulvovaginal exams showed significant improvements in fluid volume, elasticity, epithelial integrity, and moisture from T_0 to T_1, which were sustained at T_2

Exploratory endpoints:

- Of 7 sexually inactive patients at enrollment, 5 resumed sexual activity during the study
- 9 patients reported an increase in sexual activity frequency and 11 reported improved pain with sexual activity by either T_1 or T_2
- When compared to baseline, there was no significant change in patients' adherence to endocrine therapy at T_1 (p=0.157) or T_2 (p=1.00) after PRP

Post-treatment pain scores were low; one patient developed post-treatment itching requiring an antihistamine and fluconazole

Conclusion

Vulvovaginal PRP applied in a standard application appears to be an effective and durable non-hormonal treatment for GSM in breast cancer survivors.

Future work will compare PRP-treated patients to those instructed to use non-hormonal moisturizers and dilators alone.

Download the abstract here:

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