Impact of Text Reminders on Pneumatic Compression Device (PCD) Compliance in Patients with Breast Cancer-related Lymphedema

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BACKGROUND AND OBJECTIVE

Lymphedema is a chronic debilitating disease. Breast cancer treatments can result in breast cancer-related lymphedema (BCRL), with reported frequencies ranging from 6%-65%. Treatments for lymphedema focus on symptom management and improved patient-reported outcomes. Traditional interventions include manual lymphatic drainage compression therapy and self-care. More recently, pneumatic compression devices (PCDs) have become an additional treatment option that clinicians offer patients for treatment of lymphedema. Clinical studies have demonstrated that regular use of PCDs, as an adjunct to standard self-care measures, is associated with significant patient-reported improvements in overall symptoms. Adherence to prescribed at-home self-care is critical and text messaging is a method to remind patients to use therapies.

The primary purpose of this study was to determine whether cell phone text reminders impacted the rate of compliance with PCD therapy. Secondary outcomes were to examine the changes in arm girth, quality of life (QOL), and symptom severity in patients using PCD for BCRL.

METHODS

A prospective, randomized, two-group feasibility study conducted at two centers. Participants were adult females (≥18 years old) with unilateral BCRL who had the capability of receiving reminder text messages. All participants underwent PCD therapy. Participants were randomized 1:1 to control (no text messages) or test group (received text message reminders if the PCD had not been used for two consecutive days).

- Primary outcome measure: The rate of compliance between treatment groups.
- Secondary outcome measures: Changes in arm girth, QOL, and symptom severity.

Compliance was defined according to the number of completed treatments per week: Complete compliance: 5-7 days; partial compliance: 1-4 days; no compliance: <1 day.

ASSESSMENT AND RESULTS

Twenty-nine participants were enrolled and randomized and 25 were available for follow-up at 60-days (14 test, 11 control). Overall, 52.2% (12 out of 23) of all participants were completely compliant, an additional 43.5% (10 out of 23) were partially compliant, and one patient (4.3%) was noncompliant. The test and control groups did not differ in device compliance. In the pooled population, weight, body mass index (BMI), and arm girth were improved. Overall disease-specific QOL and symptom severity were improved. Regression analysis showed benefits were greater among participants with higher rates of compliance.

KEY POINTS

- Text message reminders did not improve treatment compliance because BCRL patients are already highly treatment compliant.
- Significant improvements in both test and control groups were:
  - Mean weight and BMI
  - Arm girth
  - Lymphedema-specific QOL (LYMQOL) and symptom severity measures
  - Pain (per SF-36 pain domain score)
- Improvements in secondary endpoints were seen in both completely and partially compliant groups, but completely compliant had better improvements in arm girth, LYMQOL-ARM functional domain score, and LSIDS-A overall
  - Partial compliance is beneficial, but encourage full treatment compliance for superior results.

CONCLUSION

BCRL patients are compliant with PCD use over 60 days. Full compliance of utilizing PCD resulted in improved arm girth, weight and BMI, symptom severity, QOL, mood, pain and function, and overall QOL benefits.

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