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Abstract Title:

Influence of vibration (Andullation) on breast cancer related lymphedema through vagal nerve activity stimulation: preliminary result of a randomized clinical trial.

This study is part of the Chair 'Andullation Care Research' at the Vrije Universiteit Brussel

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Introduction

Previous research has shown the important correlation between vagal nerve activity and the onset and progression of breast cancer related lymphedema (BCRL). On the other hand it is well known that physical techniques may have a positive effect on vagal nerve activity. If physical applications, like vibrations, can decrease the onset and improve the progression of BCRL, patients may benefit from using vibration applications individually at home. For socioeconomic as well as psychosocial reasons, it is important to further explore self-management options for BCRL-patients in the maintenance phase.

Objective

The aim of this study is to explore the effect of stochastic modulated whole body vibrations on vagal nerve activity of breast cancer patients, thereby influencing the onset and progression of BCRL.

Materials and methods

Design: randomized clinical trial (registered at clinicaltrials.gov). Breast cancer patients have radiotherapy 5 times a week during 3 weeks. Three times a week they receive whole body stochastic vibrations during 20' following RT (intervention group). The vibrations are built-in into an ergonomic bottom layer where the patients lay on supine. The control group is treated equally but without activating the vibrations. The primary outcome is heart rate variability (HRV) as an index of vagal nerve activity. Secondary outcome is BCRL measured by arm volume difference with a Perometer and by extracellular fluid in the upper extremity by means of SOZO (Impedimed). Measurements are performed at baseline, immediately following the intervention and at follow-up (2 months later).

Results and conclusion

By the time of the congress, the first preliminary results of the study will be available. Our hypothesis is that the intervention group develops higher HRV over time than the control group and that the onset and progression of BCRL in the intervention group is less than in the control group.