Electrical Sensory Discrimination Therapy in Complex Regional Pain Syndrome

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INTRODUCTION

Complex Regional Pain Syndrome (CRPS) is a chronic pain condition which has a significant adverse impact on quality of life. Studies in amputees with phantom limb pain and patients with CRPS have demonstrated that intensive sensory training can reverse cortical changes and reduce pain[1,2]. We developed an Electrical Sensory Discrimination Therapies device (ESDT) for home use (Fig 1).

AIM

To assess the usability and acceptability of ESDT device and establish adherence to a 4 week training programme.

METHOD

Participants met CRPS type I, research criteria ≤ 2 years duration. Written informed consent was obtained and the study approved by relevant ethical committees. ESDT comprised ≤ 60 minutes/day.

A 4 electrode array was placed close to the allodynic area and activated in turn, using a force choice paradigm, progressively reducing the spacing and increasing the choice. Acceptability was assessed by questionnaire. The frequency and duration of training was recorded by computer software.

References

[1]Flor H (2002)Applied Psychophysiology and Biofeedback . 27(3):215-225

[2]Pleger et al (2005) Sensorimotor returning in complex regional pain syndrome parallels pain reduction. Annals of Neurology. 57(3):425-429.

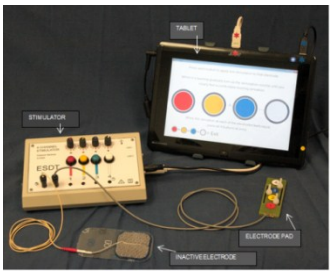

Fig 1: Electrical Sensory Discrimination Therapy Device

RESULTS

Five female participants;

- age range 42-47yrs
- disease duration 7-18 months
- 4 x upper limb, 1 x lower limb affected
- Participants described the benefit of using the ESDT as distracting and enjoying the challenge of progressing through levels.
- Mean total training during the study = 12.7 hours per patient (range 4.16 – 20.7). See Table 1.
- Over the 4 week programme the mean number of training days was 17 (range 11-25).

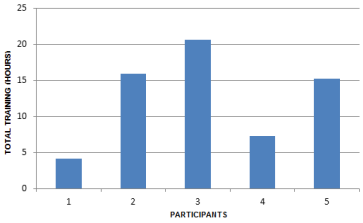

Table 1: Total training during the study

CONCLUSION

Patients with CRPS can safely use and tolerate ESDT. Adherence to the training programme varies widely. Data collection will inform the design of a future randomised controlled trial to test efficacy of pain relief.

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