

# Pilot research study to investigate the efficacy of a specific reflexology sequence for chemotherapy induced peripheral neuropathy pain in cancer survivors.

#### BACKGROUND

Reflexology is defined as a manual technique used to stimulate nerve endings, mainly on the feet, said to correspond to various organs, glands, tissues, and body parts within parallel zones. It can be performed anywhere, requires no special equipment, is non-invasive and offers the recipient the psychological benefits attached to human touch and responsiveness.

Pain is an aggravating factor associated with cancer and its treatments, invoking fear and anxiety in cancer patients that ranks as one of the highest concerns both physically and emotionally.<sup>1,2</sup> The author's previous research has demonstrated a clear antinociceptive effect following reflexology.<sup>3</sup> Chemotherapy Induced Peripheral Neuropathy (CIPN) is one of many side-effects associated with the aggressive chemical drugs used in cancer treatment.<sup>4</sup> Of neuropathic origin, it is one of the most difficult of all pain conditions to treat effectively. The probability of CIPN is dependent on the type of drug used, the treatment duration and any pre-existing history of nerve damage.<sup>5</sup> Up to 30% of cancer survivors report CIPN symptoms at least six months post treatment, whilst 47% may still experience symptoms on average six years after the end of treatment.<sup>6</sup>

The pathology of CIPN is not yet fully understood but the main involvement is thought to develop from within the dorsal root ganglia (DRG) and the axons. The sensory neurons of the DRG lack a blood-nerve barrier making them more susceptible to damage from neurotoxic drugs.<sup>7,8</sup> Pain from CIPN can be extremely debilitating and treating it effectively is a growing unmet need in cancer survivors, with sequelae that are difficult to manage and with limited pharmacological efficacy.<sup>3,10</sup>

## OBJECTIVES

The aim of this study was to evaluate whether a specific reflexology protocol would influence subjective pain scores in individuals diagnosed with CIPN.

#### METHODS

Eight clients previously diagnosed with CIPN attended five practitioners in private clinics, hospices, or hospital outpatient units across the United Kingdom. They were each subjected to the CIPN reflexology protocol as devised by the author for three consecutive weeks. Their subjective pain scores were obtained in week 1 (control) and in weeks 2 and 3. Personal statements of treatment effect were also obtained from clients as handwritten testimonials following the final session.

## DEMOGRAPHICS

Eight clients each with various forms of cancer, including breast, bone, lymphoma, peritoneal and endometrial. The age range was 54 – 79 with a MEAN age of 65. All clients were female, had previously received chemotherapy and had 7 days between reflexology sessions.

### REFLEXOLOGY RATIONALE

Kurt *et al.* has shown that 10 minutes of reflexology to the reflected reflex points for the brainstem and brain demonstrates significant improvements in sensory, motor and ANS function.<sup>11</sup> These points are specified as being present on the medial border of the great toe on each foot and over the head of the distal phalanx.

The author hypothesized that by stimulating the entire spinal column (as reflected on the feet) to access the reflected reflex points for the dorsal root ganglia (DRG), the autonomic nervous system including the pre and paravertebral ganglia in its entirety, the vagus nerve, the phrenic nerve together with the reflected reflex points for the brainstem and both motor and sensory cortex, perception of pain may reduce.

## RESULTS

Figures 1a and 1b show the results of the VAS for pain. Fig 1a shows the VAS for the individual subjects and Fig 1b shows the Median (1<sup>st</sup> and 3<sup>rd</sup> quartile) pain scores for the 8 subjects. Analysis of the results (Figure 1b) showed that there was a significant effect on VAS for pain. VAS was significantly attenuated between control data (VAS taken before session 1) and those a week (P<0.01; n=8, W- =0, W+ = 36; VAS taken before session 2) and two weeks later (P<0.05; n=8, W- = 1, W+ = 28; VAS taken before session 3). There were no significant differences in the data between VAS taken before Session 2 and before Session 2 and before Session 2 and two serves.



Figure 1a: Individual Pain VAS scores for the eight clients across three consecutive weeks



Figure 1b: The effects of reflexology on VAS pain scores. The graph shows the median VAS recorded prior to each reflexology session on Week 1 (Control) Week 2 and Week 3. The numbers in brackets above each column in the figure is the 1st and 3rd quartile (--). \*P<0.01s, \*\*P<0.01 vs Control. Dr Carol Samuel PhD. Penk Ridge, Havant. PO9 3LU Email: carol@reflexmaster.co.uk

As part of their final case reporting, practitioners were asked to obtain written feedback from their clients when they had completed the three treatment sessions, thus providing the client an opportunity to reflect and comment on their experience. The returned data has been recorded in **Table 2** and suggests that clients were satisfied with the outcomes of their sessions and were keen to continue.

Table 2: Client reflections on their treatment following three consecutive weeks of reflexology using the CIPN protocol.



#### CONCLUSION

Whilst further structured research is necessary, the outcomes of this pilot study indicate that Reflexology may be a suitable integrative approach for patients experiencing pain from chemotherapy induced peripheral neuropathy.

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