ABSTRACT

Studies in canines of the effects of lymphatic pump techniques (LPT) have shown that LPT mobilizes leukocytes, thereby providing rationale that LPT may enhance immunity. Moreover, in post-operative cholecystectomy patients that received LPT, "earlier recovery and quicker return to preoperative values" with regard to forced vital capacity has been demonstrated. However, longitudinal evaluations of the effects of utilizing regular LPT to ameliorate disease outcome has not been investigated in humans. We hypothesized that administration of regular LPT to non-immunocompromised human subjects would reduce frequency and duration of upper respiratory infections (URIs). Following approval by the Burrell College of Osteopathic Medicine (BCOM) institutional review board (IRB), participants were recruited from BCOM student, staff, and faculty populations, as well as students from New Mexico State University (NMSU). During twelve weeks of the cold and flu season, LPT was administered three times per week to the experimental group while the control subjects received sham treatments three times per week. Data were gathered during each visit through self-report surveys given to the participants. Seventy-six participants completed the study out of 86 who enrolled. Although disease frequency was not statistically different between the two groups, among the 76 participants who completed the study, there was a statistically significant difference in duration of illness with 6.96 days duration of illness in the experimental group and 9.81 days duration of illness in the control group (p=0.0463). This strongly suggests that regular application of LPT is an effective means for reducing duration of URIs. This feasibility study provides strong scientific rationale for performing a larger scale study with greater statistical power.

METHODS

• Study participants consisted of staff and students from BCOM and students from NMSU.
• Recruiting was done on a population of individuals in good health, but who are typically in close contact with high volumes of people.
• Two study groups – one experimental and one control group.
• Treatments were given three times per week throughout cold and flu season.
• During every appointment, the experimental group received LPT treatment, as per Nicholas Atlas of Osteopathic Techniques.
• During every appointment, the control group received sham LPT treatment.
• Incidence of upper respiratory infections was monitored via a questionnaire, which participants completed prior to treatment for every appointment.
• Questionnaires queried a comprehensive self-reported list of symptoms, symptom duration, vaccination status, and sick contacts.
• Participants with unintentional weight loss, recent motor vehicle accident or persistent abdominal pain were interviewed by a study PI and excluded if LPT posed potential harm or exacerbation of reported symptoms.
• Statistical analysis of symptom duration were performed using a one-tailed T-test.

RESULTS

• There was statistical significance (p=0.0463) between the duration of illness for the treatment group (6.96 days) and the control group (9.81 days) (fig. 3). These results suggest that regular application of LPT reduces duration of URIs.

DISCUSSION

• The results suggest that regular application of LPT reduces duration of URIs, and supports the concept that regularly applied lymphatic techniques increase lymphatic flow/drainage and immune surveillance to enhance immunological responses against infections. These data are in line with research conducted by Nol, et al 2010, which demonstrated decreased length of hospital stays, reduced antibiotic treatment, and reduced morbidity/mortality in pneumonia patients who received Osteopathic Manipulative Treatment (OMT) during their hospital stay.
• Study limitations include: voluntary self-removal of participants, automobile accident disqualifications, small sample size, study initiation after "official" onset of cold and flu season, participants receiving additional non-pharmacologic treatments outside of study, and subjective self-report of illness duration.
• This feasibility study provides strong scientific rationale for performing a multicenter study with greater statistical power. Future studies should include blood analyses to examine correlation between changes in levels of leukocytes (Hodge et al. 2010) and cytokines (Schander et al. 2012) during administration of LPT and resistance to URIs.

TECHNIQUES

A. Thoracic Inlet/Outlet - Myofascial Release
• Direct technique with 1 lb of pressure applied to the thoracic inlet/outlet after greatest restriction is determined via external and internal rotation of the arm. Then 5-10 lbs of traction is applied to each arm. Position held for 30 seconds on each side.
• Sham Modification: Non-therapeutic location, less pressure and traction applied.

B. Doming the Diaphragm
• Hands are placed one at a time medial to each costal margin with firm pressure. To avoid excess pain, hands are placed lateral to the xiphoid process (technique modified from Morris G. During each exhalation, thumbs gently press posteriorly and laterally following the motion of the diaphragm. Position maintained during each inhalation. Technique continued for 30 seconds.
• Sham Modification: Abdominal non-therapeutic location, thumbs placed on costal margins.

C. Pedal Pump
• Feet are placed in dorsiflexion with cephalad force applied through the feet with a frequency of 2 pumps per second with enough effort to elicit a "wave" through the abdomen from the umbilicus to the sternum. Pumping motion is repeated for 3 minutes while patient breathes normally.
• Sham Modification: Abdominal wave and pumping frequency not achieved.

Respiratory assist of three deep breaths was utilized for all experimental and sham techniques. To ensure standardization of the techniques, all were performed by either a Board-certified Osteopathic Physician (DO) or researchers who were trained under the direct supervision of a DO.

REFERENCES


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