

Research letter

Osteopathic Manipulative Treatment on Predominantly African American Hospitalized Coronavirus Disease 2019 Patients during Michigan's First Wave

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INTRODUCTION

During the first surge of the deadly coronavirus disease 2019 (Covid-19) pandemic in 2020, there were few treatment options available.^{1,2} Osteopathic manipulative treatment (OMT) has been shown to reduce length of stay (LOS) in hospitalized patients with pneumonia when used as an adjunctive treatment.^{3,4} The objective of this study was to determine the effect of osteopathic lymphatic drainage technique in hospitalized patients with Covid-19.

MATERIALS AND METHODS

This retrospective cohort study (IRB Approval 1722752-1) reviewed records of Covid-19 patients >18 years of age admitted between 3/30/2020 and 4/7/2020 and received standard of care with or without OMT. LOS in days, intubation, mortality, demographics, including age, gender, race, and several co-morbid conditions consistent with Centers for Disease Control and Prevention 2020 guidelines were collected.⁵

Physicians used the pedal pump lymphatic drainage OMT technique⁶ twice daily to improve lymphatic flow where the provider stood at the foot of the bed with the patient lying prone and placed gentle pressure on the patient's metatarsals. The provider alternated dorsiflexion and relaxed position for two minutes to encourage a fluid wave.⁶ During dorsiflexion, a wave of motion moved from the feet to the head and then a rebound wave returned to the feet as the provider allowed the feet to be at the relaxed position. Once the wave was returned to the feet, the provider repeated the process by initiating dorsiflexion.⁷

We used IBM SPSS Version 23 (Armonk, NY: IBM Corp) to perform an independent t-test for continuous data and Chi Square for discrete data. A p-value < 0.05 was deemed significant.

RESULTS

Medical records from 46 hospitalized Covid-19 patients were reviewed. OMT-treated patients (n=14) were 57% female and 71% African American, whereas patients in the control group (n=32) were 47% female and 88% African American. Average ($\pm$ standard deviation) age was 63 ± 10

years for the OMT group ($p=.100$) and 70 ± 15 years for the control group. The OMT group had an average of 2 ± 1 comorbidities, whereas the control group had 3 ± 1 ($p=.098$). Differences in the outcome variables LOS (OMT, 7.5 ± 3.7 versus control, 8.1 ± 7.2 , $p=.751$), intubation (OMT, 29% versus control, 22%, $p=.713$), and death in hospital (OMT, 14% versus control, 28%, $p=.46$) were not statistically significant.

DISCUSSION

We found non-statistically significant outcomes between the two groups. However, the OMT group had a shorter LOS (0.6 days) and more importantly, 14% fewer number of deaths. A shorter LOS was critically important during the pandemic when availability of hospital beds was scarce. This allowed us to accommodate and treat other patients within a shorter timeframe during this crucial period. Also, a half day less of hospital stay translated to less financial burden to the patients. A lower rate of death was also especially critical during the early days of Covid-19 when very little information was known about the disease.

The importance of touch associated with OMT should also not be overlooked. The patients were not allowed visitors during this time and medical personnel limited visits in the room due to shortage of personal protective equipment. In a multisystem pneumonia trial, light touch reduced mortality in patients 75 and older.³

To our knowledge, this is the first study that involved a predominantly African American patient cohort. Current studies reported a majority of Caucasians or did not report ethnicity or race at all.⁸⁻¹⁰

Limitations include a small sample size. Additionally, the OMT technique used was lymphatic pedal pump which allowed the treating physician to stand at a distance from the patient to avoid increasing their risk of contracting Covid-19. Other lymphatic drainage techniques, such as thoracic pump, were not included as they required the provider to be in closer proximity to the patient which was not allowed early in the pandemic.⁶

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CONFLICT OF INTEREST DISCLOSURE

None

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