Preliminary investigation into the effects of chiropractic treatment, myofascial release, and a combined treatment on mechanical nociceptive thresholds of horses

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Background

Credible evidence supports that chiropractic treatment(CT) of the equine spinal misalignments helps restore joint range of motion(ROM)[1] improving soft tissue function whilst diminishing pain[2]. Correspondingly myofascial release(MFR) acts by reducing myofascial constrictions[3], increasing spinal vertebrae joint ROM[4].

The study aim was to objectively investigate the effect of CT and MFR treatments over time, and to ascertain if combining these two therapeutic modalities produced a synergistic effect. The established method of Pressure Algometry (PA) was used to measure the mechanical nociceptor thresholds (MNTs), an indicator of musculoskeletal tenderness[1], of the thoracolumbar musculature of riding school horses.

Materials and Methods

This repeated measure study used 20 riding school horses with no known back pathologies, aged between 5 and 15 years (mean age 11.25 years ± 2.9 years). Random allocation to four groups(n=5), control group (no intervention), chiropractic, myofascial release, and combined treatment groups. With Veterinary consent all treatments were undertaken by a single qualified McTimoney animal practitioner. Whilst the horses stood square, Research Assistance A measured MNTs bilaterally in triplicate. Using FDK-60 pressure algometer on the epaxial muscles located 10 cm ventral to the spine at T9, T13, L3 and L6. The results were recorded by Research Assistant B. Both research assistants were blinded to the treatment groups. The time points used were pre-treatment, post-treatment, Day 1, and Day 7 post treatment. PA repeatability was assessed. Data was tested for normality by Komologorov-Smirnov test. Group data was analysed over time points using Kruskal-Wallis H test with post hoc tests.

Results

The median range of all measuring points for the three consecutive measurements was 1-3 kg/cm^2. There was no significant difference ($p>0.05$) pre-treatment to Day 7 for neither the control nor MFR group. There was a significant increase in mean MNTs pre-treatment to Day 7 for both the CT and combined MFR & CT treatment groups, of 9.25% and 32.34% respectively (Figure1).

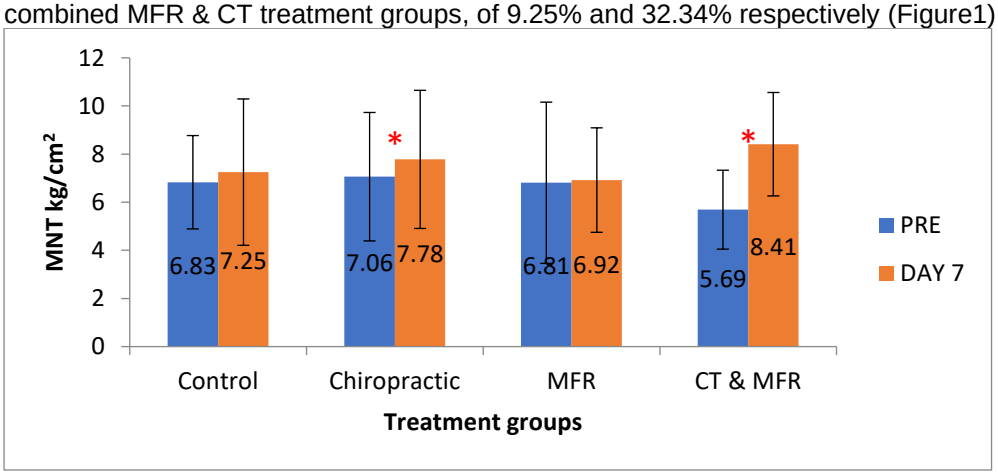

Figure 1. Mean MNTs pre-treatment and Day 7 for all groups. * indicates significance ($p<0.05$)

Conclusion

This study provides positive evidence that a single CT treatment and combined treatment of MFR and CT, illicit statistically significant reductions in musculoskeletal tenderness. Indicated by increased MNTs of specific equine thoracolumbar musculature, for up to 7 days, when compared to no treatment and MFR groups. Equine chiropractic practitioners may enhance their therapeutic outcome by delivering MFR immediately prior to CT. Further investigation is warranted with larger cohorts and over a longer time periods.

References

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