Biomechanical changes evaluation using Ferguson Angle on patients with lumbar facet tropism treated with manipulative therapy.

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Lumbo-sacral angle or Ferguson Angle (FA) it is a well stablish reference on literature for biomechanical determination of lumbar spine alignment. Facet tropism is an embryologic and anatomic condition affecting spine joint facets biomechanics. Variability on FA measurement could disturb articular congruency between joint facets. Alterations of FA, has influence over proprioceptive responses, and provoke several physio-pathological progressive changes as: muscles contraction dysfunction, deformities or degenerative process at joints, disks, scoliosis or any other type of degenerative condition affecting facet joints range of motion.The purpose of this work is to evaluate biomechanical changes using FA measurements on subjects treated with chiropractic manipulative therapy. A sample of 32 college students between ages 19 to 30, participated on the study. A 68.8% (22) were females and 31.3% (males). Radiographic (AP and lateral lumbo-pelvic X-rays) measurements of FA were made to all participants before and after being treated with chiropractic manipulative therapy. A 64.3% of the sample were identified with lumbar facet tropism at the zygapophysial joints. A chiropractic manipulative therapy treatment was given to all subjects during 4 weeks, 2 times per week. After treatment, new radiographic measures were taken to determine biomechanical changes. A 64.3% of subjects had lumbar facet tropism at lumbar zygapophysial joints, all evaluated with radiographs. After chiropractive manipulative treatment a significant change ($p \leq 0.05$) was observed on Ferguson angle measurement. Changes in all patients with facet tropism were observed (41.3 ± 6.0 - 43.5 ± 6.0 $p \leq 0.02$).Conclusion: Manipulative chiropractic therapy modify measurements of FA, on patients with facet tropism at lumbar spine. This type of treatment has a positive impact on lumbar biomechanic dysfunctions.

Publications

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