E-Poster

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Postural Profile Assessment of Patients With Low Back Pain

Topic: Virtual Reality

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BACKGROUND

Chronic low back pain (CLBP) is a prevalent condition that constitutes a major cause of activity limitations and work absenteeism. Patients with CLBP frequently experience deficits in motor control, particularly in the deep trunk muscles, leading to delayed neuromuscular responses and proprioceptive impairments. Postural control assessment can be performed using clinical or instrumental approaches. This study aims to evaluate the postural profile of patients with chronic low back pain using posturograph platform to quantify postural control impairments.

METHODS

A prospective, descriptive pilot study was conducted in September 2024 at the Department of Physical Medicine and Rehabilitation of CHU Rabat. Six patients diagnosed with chronic low back pain were included. Postural assessment was performed using a balance platform in both seated and standing positions. Key posturographic parameters analyzed included the Center Of Pressure (COP) displacements in the mediolateral COP X and anteroposterior COP Y with both eyes open and closed. Additionally, pelvic mobility was assessed in the seated position.

RESULTS

The mean age of the patients was 49.5 ± 9.89 years, with an average pain intensity score of 4.83 ± 1.47 on the Visual Analog scale (VAS). Postural assessment in the standing position revealed a mediolateral COP displacement of -11.5 mm [-14.9; -7.27] with eyes open and -10.2 mm [-14.2; -7.14] with eyes closed. Anteroposterior COP Displacement was 6.77 mm [-11.4; 23.5] with eyes open and 10.5 mm [-5.02; 27.8] with eyes closed. In the seated position, the median pelvic mobility area was 216 mm^2 [117; 314]. These findings suggest that patients with CLBP exhibit significant deviation in center of pressure, predominantly towards the left and forward. Moreover, a significant reduction in pelvic mobility was observed in the seated position highlighting potential impairments in lumbopelvic control.

CONCLUSION

Chronic low back pain affects postural control, but findings are inconsistent. Some studies show no major differences, while others find no direct link to pain intensity. Variability in assessment methods may explain these discrepancies. Post-rehabilitation evaluation could offer insights. Ongoing patient recruitment and data collection will refine these conclusions.

Statement of Disclosures

None

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