Oral Communication

OC-42

Foot Pressure Changes During Pregnancy and Association With Low Back Pain - A Prospective Cohort Study

Topic: Biomechanics

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BACKGROUND

Throughout pregnancy, many women experience low back pain (LBP), which often worsen during the third trimester. Among the factors causing LBP during pregnancy, frequently suggested mechanisms are weight gain during pregnancy, the enlargement of the abdominal sagittal diameter, and the subsequent forward shift of the body's center of gravity (COG), which can place additional stress on the lower back.

To analyze redistribution of pressure in the forefoot and hindfoot and its association with increase in low back pain in the first, second and third trimesters of pregnancy.

METHODS

A prospective cohort study was conducted in 38 pregnant females during their all three trimesters in Gait lab of PMR department, All India Institute of Medical Sciences (AIIMS) Rishikesh. Correlation between Numerical Pain Rating Scale and the following variables (Peak pressure of lateral forefoot and medial forefoot, midfoot, lateral hind foot and medial hind foot (N/cm2), body mass index (BMI) and weight gain) were noted.

RESULTS

The correlation of peak pressure, contact area and maximum force at individual foot areas with the Numerical Pain Rating Scale across different trimesters were relatively high. In the first trimester, a positive and significant correlation between the intensity of pain and the peak pressure in all the foot areas was observed. A positive and significant correlation between the intensity of pain and the peak pressure was observed only in the Lateral Rearfoot and Lateral Forefoot in second and third trimester.

CONCLUSION

Throughout the trimesters of pregnancy, there are noticeable alterations in plantar pressure distribution. These changes have a positive correlation with the progression of lower back pain experienced by pregnant women. Developing a better understanding of these biomechanical adaptations holds the potential for more efficient management of LBP symptoms during pregnancy.

Statement of Disclosures

None

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