Prediction of peak plantar pressure for diabetic foot: The regressional model.

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Abstract

BACKGROUND: The increase in peak plantar pressure could be the most important etiological factor for pathogenesis of a diabetic foot. Thus the fate of a diabetic foot syndrome which is a clinical triad of neurological, vascular and musculoskeletal changes could be biomechanically predictive and preventive using clinical parameters. In the presence of peripheral neuropathy, certain clinical parameters could be severely altered resulting into increased peak plantar pressure. Therefore the aim of the study was to identify the most important clinical parameters for the prediction of peak plantar pressure between neuropathy and non-neuropathy type 2 diabetes mellitus participants. **METHODOLOGY:** A total of 380 participants were recruited under the study and divided into two groups (190 each group). The cross-sectional study was conducted at Kasturba Hosipal, Manipal, India. Multiple regression analysis was performed to find the hyperplane of best fit. Stepwise regression was performed with (α entry=0.15 and α removal=0.2) to select the best subset of predictors. **RESULTS:** Adjusted R^2 of the final model which included the predictors showed 90.8% variability for the dependent variable. **CONCLUSION:** The findings from the regression analysis suggested model was found to be strongly significant in predicting the peak plantar pressure between neuropathy and non-neuropathy type 2 diabetes mellitus participants. Since higher values of peak plantar pressure is strongly associated with risk for future diabetic foot complications, it could be suggested that these clinical parameters could be very useful to assess and should be used in routine clinical practice very effectively.