The purpose of this study was to determine the relationship between the integrated electromyography signal (iEMG) of the vastus medialis and the register of the vertical ground reaction forces in a force plate. Subjects were instructed to perform 4 continuous repetitions of half squat, with an external load near the 100% of body weight (100%BW) and 150% of body weight (150%BW). These movements were chosen because are usually used in sport training, whereas other investigations studied in isometric or isolated dynamic situation. The coefficient of bivariated (Force-iEMG) correlation of Pearson has been considered in the global movement and in eccentric and concentric phases separately. Student's T-Test for independent samples was used to compare both loads (100%BW and 150%BW). Results showed good lineal correlation on global movement (0.80 ± 0.13; p<0.01), and also for the eccentric and concentric phases (0.79 ± 0.12; p<0.01 and 0.80 ± 0.14; p<0.01), respectively. Furthermore, the Force-iEMG relationship shows a lower correlation while load increase (p=0.12). Our results are according with some studies that show a lineal Force-iEMG relationship. However, further investigations are required with different population and sample.

Keywords: Strength Training, Electromyography, Force Plate