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MUSCLE CO-CONTRACTION ASSESSMENT DURING WALKING IN CLINICAL PRACTICE-A PRELIMINARY ACCURACY AND REPRODUCIBILITY STUDY

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Introduction: Muscle co-contraction (Co) has been shown to be important for motor control. Its assessment during walking has generally been performed under laboratory conditions, using high-tech equipment (H-Tech), which limits its applicability in clinical practice.

Objective: To test the error in the assessment of Co using a low-tech ambulatory system (L-Tech).

Methods: Thirty-five gait cycles were recorded whilst healthy participants walked along a 5 meter corridor at their comfortable speed. Electromyographic muscle activity of rectus femoris (RF) and biceps femoris (BF) of one randomly assigned lower limb was recorded (Procomp Infiniti Encoder, 2000 fps.). Complete gait cycles (first double support-DS1; single stance-SS; second double support-DS2; swing phase-SW) were identified using L-Tech (USB-webcam; 15fps, at sagital plane) and a H-Tech (12-cameras,Vicon system; 200fps.), both synchronized with electromyography. Co was quantified for each walking phase, using the formula: common area of the linear envelopes of antagonist muscles/the average of the areas of those muscles. The percentage (%) of error (Co differences between systems/L-Tech*100) was calculated. One-way ANOVA was performed for a variance analysis of Co between gait phases within each system and coefficients of variation (C.V.) were presented.

Results: The mean % of error was of 7.5%. Non-significant Co differences were detected between gait phases (C.V. 7.9-16.2% *versus* 7.8-12%) in both L-Tech and H-Tech systems (p>0.05).

Conclusions: Co detected by a L-Tech, inexpensive and ambulatory system showed acceptable reproducibility and accuracy generating the potential for cost-effective data collection in clinical settings.

Descriptors: Muscle co-contraction. Walking. Reproducibility. Accuracy.

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COMPARATIVE ANALYSIS OF THE MANAGEMENT OF DIABETES MELLITUS IN UCSP AND USF IN THE ALTO MINHO REGION

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Introduction: The reform of primary health care in Portugal led to the coexistence, among others, of the family health units (USF) and units of personalized healthcare (UCSP). The matrix of care that is inherent in each of the units influences the management of chronic diseases such as diabetes mellitus.

Objective: This study aims to compare the costs of treatment in ambulatory, health gains inherent values of glycosylated hemoglobin (HbA1c), as well as the level of assistance to the chronically ill in the units under study (UCSP and USF).

Methods: The study used the questionnaire Assessement of Chronic Ilness Care (ACIC). Through this, they settled, among others, overall scores for each type of unit, which reflect the level of integrated care for diabetic patients. The information on average costs and percentages of HbA1c were removed from the Information System of the ARS. It was considered a significance level of 5%.

Results: There were no significant differences between the mean scores of the ACIC, made In USF and the UCSP. On the other hand, the direct costs of treatment as an outpatient, the UCSP showed a higher average cost to USF (p<0.05). Also the results of HbA1c ≥8% there were significant differences (p<0.05) between the two types of units, with USF proving more effective.

Conclusions: The results show that both types of units only ensure basic support to diabetic patients, and the USF have a lower value with probability of diabetic complications and reduced the cost in their treatment.

Descriptors: Primary health care. USF. UCSP. ACIC. Diabetes mellitus..

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