Variability and short-term determinants of walking capacity in patients with intermittent claudication

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Résumé en anglais	OBJECTIVE: Global positioning system (GPS) recordings can provide valid information on walking capacity in patients with peripheral arterial disease (PAD) and intermittent claudication (IC) during community-based outdoor walking. This study used GPS to determine the variability of the free-living walking distance between two stops (WDBS), induced by lower-limb pain, which may exist within a single stroll in PAD patients with IC and the potential associated parameters obtained from GPS analysis.METHODS: This cross-sectional study of 57 PAD patients with IC was conducted in a university hospital. The intervention was a 1-hour free-living walking in a flat public park with GPS recording at 0.5 Hz. GPS-computed parameters for each patient were WDBS, previous stop duration (PSD), cumulated time from the beginning of the stroll, and average walking speed for each walking bout. The coefficient of variation of each parameter was calculated for patients with the number of walking bouts (N(WB)) >or=5 during their stroll. A multivariate analysis was performed to correlate WDBS with the other parameters. RESULTS: Mean (SD) maximal individual WDBS was 1905 (1189) vs 550 (621) meters for patients with N(WB) <5 vs N(WB) >or= 5, respectively (P < .001). In the 36 patients with N(WB) >or= 5, the coefficient of variation for individual WDBS was 43%. Only PSD and cumulated time were statistically associated with WDBS in 16 and 5 patients, respectively. CONCLUSIONS: A wide short-term variability of WDBS exists and likely contributes to the difficulties experienced by patients with IC to estimate their maximal walking distance at leisurely pace. Incomplete recovery from a preceding walk, as estimated through PSD, seems to dominantly account for the WDBS in patients with IC.
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