

**FC-174****Evaluating physical activity in the community after sarcoma treatment using triaxial accelerometry. A new paradigm for outcome assessment?**

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Introduction: The quantitative assessment of community-based physical functioning after sarcoma treatment could enhance understanding of the impact of treatment and survivorship.^[1-3]

Aims: To test feasibility of community-based physical functioning assessment in sarcoma patients through measurement of ambulatory activity with a triaxial body worn monitor (Axivity).

Methods: A prospective cohort study (n=40) of patients treated for lower extremity bone or soft tissue sarcoma. 7-day ambulatory activity in the community was recorded using Axivity on mid-thigh and wrist alongside Toronto Extremity Salvage Scale (TESS) and patient completed activity diaries.

Results: Of 40 patients, 34 were adults of mean age 43 (19-89) years, treated for tumours in femur (19), pelvis/hip (3), tibia (9), or ankle/foot (3). 27 were treated with limb sparing surgery and 7 had amputation. 11 (32.4%) were treated with excision, 11 (32.4%) with excision + endoprosthesis, 1 (2.9%) with excision + endoprosthesis + muscle transfer, 1 (2.9%) with excision + filling of defect, 2 (5.9%) with excision + flap, 1 (2.9%) with excision + skin graft. Median TESS values for these patients were 83.62 (8.33 - 100). Devices were acceptable to patients. Median values were within acceptable ranges (Godfrey, Lord et al. 2014) such as: total steps 56796 (1400 - 168895), ambulatory bout count 2769 (61 - 12592), number of hours walked 15.5 (0.477 - 58.54), mean walk time in seconds 19.13 (9.70 - 39.11), alpha 1.585 (1.46 - 1.84) and variability 0.916 (0.70 - 1.16) (the latter two being measures of bout distribution). There was a trend towards positive association between TESS and Axivity values.

Conclusion: This study confirms the feasibility of triaxial accelerometry as a quantitative and objective measure of community based ambulatory activity in sarcoma patients. This has the potential for development into a clinically useful tool with significant advantages over patient reported measures and older uniaxial accelerometers.

References:

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