Physical activity in the inpatient period after cardiac surgery: an observational study

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Questions: How much physical activity is performed in the first five days after cardiac surgery? How much of the physical activity is physiotherapy-supervised, and how much is independent? Is there a relationship between physical activity levels and functional capacity on postoperative day six? Design: Prospective observational study.

Participants: Eighty-three patients without musculoskeletal and/or neurological impairment, who had undergone coronary artery and/or cardiac valve surgery via median sternotomy. Participants performed a twice-daily program of physiotherapy-supervised walking as permitted by clinical status. Outcome measures: Physical activity levels: i) step count; and ii) duration (time) of physical activity ≥ 3 METs, were measured daily and overall from postoperative day one to five using the SenseWear Pro3 Armband. Functional capacity was measured on postoperative day six with a six-minute walk test (6MWT).

Results: Physical activity levels increased significantly with each postoperative day (p < 0.001) to a peak of 2547 ± 2336 steps and 22 ± 24 min on postoperative day five. 52 ± 20% of overall step count and 57 ± 29% of overall time ≥ 3 METs was physiotherapy-supervised (mean duration of supervision: 189 ± 35 min over five days). There was a significant correlation between overall supervised and independent step counts (r = 0.718, p < 0.001), and overall step count and 6MWT distance (r = 0.779, p < 0.001). Conclusions: The majority of physical activity after cardiac surgery is performed under physiotherapy-supervision. Increased physical activity, both supervised and independent, is related to improved functional capacity.

Key Practice Points:
• Physical activity is limited early after cardiac surgery.
• A majority of physical activity is performed under physiotherapy-supervision.
• Increased physical activity is related to improved functional capacity.