MedicalXpress

Activity matters: How Fitbit can help us understand cancer surgery recovery

December 6 2017

A new study published in *Annals of Behavioral Medicine* finds that more activity during inpatient recovery predicted lower risk of 30- and 60-day readmission after surgery for metastatic peritoneal cancer. By monitoring patients using Fitbit, researchers found that higher Fitbit steps forecast better patient outcomes.

Exercise is encouraged after surgery and is a key component of recovery, but postoperative exercise is rarely monitored systematically as part of clinical care or examined as a predictor of important clinical outcomes such as readmission.

The recent emergence and growing popularity of commercially available, low cost, reliable wearable devices like Fitbits permit simple, objective, and continuous quantification of physical activity and remote real-time monitoring of patient ambulation, but whether these passively-sensed data can predict subsequent clinically important outcomes remains unclear.

Readmission is common after complex cancer surgeries, with 15-50% of patients readmitted within 30 days of discharge following surgery to remove abdominal cancer. Preventable readmissions are associated with increased health care costs and poor long-term outcomes including early mortality, and patient and family stress and suffering.

The purpose of this study was to determine whether the number of steps taken during inpatient recovery predicts 30- and 60-day readmission risk

after metastatic cancer surgery. Patients diagnosed with metastatic peritoneal cancer and scheduled for surgical resection were enrolled in this observational cohort study at their preoperative clinic visit. Fitbits were placed on patients' wrists upon transfer from intensive care following surgery and worn for the duration of their inpatient stay. Information about hospital readmission was extracted from electronic medical records.

Seventy-one patients participated in the study. The researchers calculated mean steps per day for each participant over the entire inpatient recovery period. Readmission within 30 and 60 days was medically indicated for 34% and 39% of patients, respectively. After statistically adjusting for age, body mass index, comorbidity, and length of postoperative stay, higher mean steps per day predicted lower 30-day and 60-day readmission risk.

Higher Fitbit mean daily step counts during inpatient recovery predicted lower risk of 30- and 60-day readmission after metastatic cancer surgery. These associations persisted after adjustment for demographic and medical covariates such as age, diagnosis, and length of postoperative stay as well as preoperative patient-reported exercise frequency.

The researchers believe that remotely monitoring real-time patient ambulation using Fitbit devices may provide opportunities to improve postoperative clinical care with minimal burden to patients and clinical providers.

More information: "Fitbit step counts during inpatient recovery from cancer surgery as a predictor of readmission" *Annals of Behavioral Medicine* (2017). DOI: 10.1093/abm/kax022

Provided by Oxford University Press