Introduction:
Hemodynamic and brain monitoring are used in many high-risk surgical patients without well-defined indications and objectives. In order to rationalize both hemodynamic and anesthesia management, we implemented monitoring guidelines for patients undergoing major cancer surgery.

Methods:
Early 2014, and for all eligible patients, we started to recommend (Standard Operating Procedure, SOP) cardiac output, central venous oxygen saturation, and depth of anesthesia monitoring with specific targets (MAP > 65 mmHg, SVV < 12%, CI > 2.5 l/min/m², ScvO₂ > 75%, 40 < BIS < 60). Eligibility criteria were pelvic or abdominal cancer surgery expected to last > 2 hours in adult patients. Pre-, intra-, and post-operative data were collected from our electronic medical record (EMR) database and compared before (from March to August 2013) and after (from March to August 2014) the SOP implementation.

Results:
A total of 596 patients were studied, 313 before and 283 after the SOP implementation. The two groups were comparable in terms of age, ASA score, duration and type of surgery, The surgical POSSUM score was higher after than before (20 vs 18, p=0.045). The use of cardiac output, ScvO₂ and BIS monitoring increased from 40 to 61%, 61 to 81%, and 60 to 88%, respectively (all p values < 0.05). Intraoperative fluid volumes decreased (16.9 vs 15.2 ml/kg/h, p=0.002), whereas the use of inotropes increased (6 vs 13%, p=0.022). The rate of postoperative delirium (16 vs 8%, p=0.005) and urinary track infection (6 vs 2%, p=0.012) decreased, as well as the median hospital length of stay (9.6 vs 8.8 days, p=0.032).

Conclusion:
In patients undergoing major surgery for cancer, despite an increase in surgical risk, the implementation of guidelines with predefined targets for hemodynamic and brain monitoring was associated with a significant improvement in postoperative outcome.