Predictors of a Prolonged Operation Duration When Using General Anesthesia in a Teaching Hospital

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Abstract

Aim: To investigate the predictors of a prolonged operation duration when using general anesthesia in a teaching hospital.

Methods: From 2012 to 2013, a total of 11,942 operations were performed at Fukuoka University Hospital. After the exclusion of operations without general anesthesia and those with planned operative duration <60 minutes or actual operative duration <30 minutes, a total of 10,623 operations were included in the present analysis. Predictors of a prolonged operation duration (defined as actual operation duration >30% of the planned duration) were assessed using logistic regression, hierarchical and mixed models with adjusting for random operator effects.

Results: The mean age of participants was 52.1 years, and 51.1% were female. The types of performed operations were cranial (5.5%), thoracic (7.2%), abdominal (9.9%), thoracoscopic (3.9%), laparoscopic (6.5%), endoscopic (1.1%), endovascular (2.0%), eye (8.0%), orthopedic (22.9%), skin (6.1%), obstetric (3.2%), gynecologic (7.0%), male genital (1.2%), otorhinolaryngological (6.8%), breast (1.6%) and others (7.1%). There were 1649 cases (13.8%) with a prolonged operation duration. In the multivariable analysis, significant predictors of a prolonged operation duration were female gender (odds ratio [OR] 1.19, 95% confidence interval [95% CI] 1.01-1.30), obesity (defined as a body mass index ≥25 kg/m^2; OR 1.19, 95% CI 1.05-1.36), history of heart disease (OR 1.38, 95% CI 1.14-1.67), laparoscopic surgery (OR 1.79 vs. abdominal surgery, 95% CI 1.34-2.38), endoscopic surgery (OR 2.50 vs. abdominal surgery, 95% CI 1.24-5.07), eye surgery (OR 2.31 vs. abdominal surgery, 95% CI 1.43-3.72) and intraoperative bleeding ≥200 mL (OR 2.95, 95% CI 2.51-3.46).

Conclusions: Female gender, obesity, a history of heart disease, several types of operation and increased intraoperative bleeding were associated with a prolonged operation duration.

Key words: prolonged operation duration, general anesthesia, predictors, observational study