

INTISARI

FAKTOR RISIKO PEMANJANGAN LAMA RAWAT INAP DI *INTENSIVE CARE UNIT* PADA PASIEN TUMOR OTAK YANG DILAKUKAN KRANIOTOMI

Latar Belakang: Pasien pasca operasi kraniotomi karena tumor otak seringkali mengalami pemanjangan lama rawat inap di ICU yang menyebabkan peningkatan morbiditas dan mortalitas. Lama rawat inap ICU dipengaruhi faktor preoperasi, intraoperasi dan pasca operasi. Pengetahuan mengenai faktor risiko pemanjangan lama rawat inap di ICU diperlukan untuk intervensi tatalaksana.

Tujuan: Mengetahui hubungan faktor – faktor preoperasi, intraoperasi dan pasca operasi terhadap pemanjangan lama rawat inap di ICU pada pasien pasca operasi kraniotomi karena tumor otak.

Metode: Penelitian ini menggunakan desain kohort retrospektif dengan mengambil data dari rekam medis tahun 2023 pada pasien pasca operasi kraniotomi karena tumor otak yang dirawat di ICU RSUP Dr Sardjito. Pengambilan sampel menggunakan metode *consecutive sampling*, sampai diperoleh 190 subjek yang memenuhi kriteria inklusi dan eksklusi. Kemudian dilakukan analisis bivariat untuk mengetahui hubungan faktor preoperasi (usia, Diabetes Mellitus, hipertensi, anemia preoperasi, BMI, GCS rendah preoperasi), faktor intraoperasi (durasi operasi lama, perdarahan banyak, lokasi tumor infratentorial, komplikasi kardiovaskular) dan faktor pasca operasi (komplikasi pulmoner, kardiovaskular, neurologikal, *Acute Kidney Injury*, disnatremia, dan GCS rendah pasca operasi) terhadap pemanjangan lama rawat inap di ICU dan kematian pada pasien pasca operasi kraniotomi karena tumor otak. Jika didapatkan $p < 0,25$ maka variabel tersebut dilanjutkan dalam analisis multivariat.

Hasil: Komplikasi kardiovaskular, neurologikal, hipernatremi, dan GCS rendah pasca operasi berhubungan secara signifikan dengan pemanjangan lama rawat inap di ICU pada pasien tumor otak yang dilakukan kraniotomi pada analisis bivariat dan multivariat dengan nilai kemaknaan berturut-turut (OR 3,51, $p=0,001$; OR 4,77, $p=0,002$; OR 3,95, $p=0,019$; OR 0,58, $p=0,001$). Komplikasi pulmoner pasca operasi memiliki hubungan yang signifikan terhadap survival ($p=0,050$) pada analisis bivariat, namun tidak berhubungan pada analisis multivariat. Faktor lain yaitu usia, Diabetes Mellitus, hipertensi, anemia preoperasi, BMI, GCS rendah preoperasi, durasi operasi lama, perdarahan banyak, lokasi tumor infratentorial, komplikasi kardiovaskular intraoperasi, komplikasi pulmoner, dan *Acute Kidney Injury* tidak berhubungan dengan pemanjangan lama rawat inap di ICU pada analisis bivariat dan multivariat.

Kesimpulan: Faktor pasca operasi yaitu komplikasi kardiovaskular, komplikasi neurologikal, hipernatremi dan GCS rendah berhubungan dengan pemanjangan lama rawat inap di ICU pada pasien pasca operasi kraniotomi karena tumor otak.

Kata Kunci: lama rawat inap, *Intensive Care Unit*, kraniotomi, tumor otak, prediktor

ABSTRACT

RISK FACTORS FOR PROLONGED LENGTH OF STAY IN THE INTENSIVE CARE UNIT (ICU) FOR BRAIN TUMOR PATIENTS UNDERGOING CRANIOTOMY

Background: Patients after craniotomy surgery due to brain tumors often experience prolonged length of stay in the ICU which causes increase morbidity and mortality. The length of ICU stay is influenced by preoperative, intraoperative factors and postoperative factors. Knowledge of risk factors for prolonging the length of stay in the ICU is needed for management intervention.

Aim: To determine the relationship between preoperative, intraoperative and post-operative factors on the length of stay in the ICU in patients following craniotomy surgery due to brain tumors.

Methods: This study used a retrospective cohort design by taking data from medical records in 2023 on craniotomy surgery patients due to brain tumors who were treated in the ICU at Dr Sardjito Hospital. Sampling used the consecutive sampling method, until 190 subjects were obtained who met the inclusion and exclusion criteria. Then a bivariate analysis was carried out to determine the relationship between preoperative factors (age, Diabetes Mellitus, hypertension, preoperative anemia, BMI, low GCS preoperative), intraoperative factors (long duration of operation, profuse bleeding, infratentorial tumor location, cardiovascular complication), and post-operative factors (pulmonary, cardiovascular, neurological complication, Acute Kidney Injury, dysnatremia and low GCS) on the length of stay in the ICU and death in patients following craniotomy surgery due to brain tumors. If $p < 0,25$ is found then the variable is continued in multivariate analysis.

Results: Post-operative cardiovascular, neurological complications, hypernatremia, and low GCS were significantly associated with the length of stay in the ICU in brain tumor patients undergoing craniotomy in bivariate and multivariate analysis (OR 3,51, $p=0,001$; OR 4,77, $p=0,002$; OR 3,95, $p=0,019$; OR 0,58, $p=0,001$). Post-operative pulmonary complications had a significant association with survival ($p=0.050$) in bivariate analysis but not associated in multivariate analysis. Other factors, include age, Diabetes Mellitus, hypertension, preoperative anemia, BMI, low GCS preoperative, long duration of operation, profuse bleeding, infratentorial tumor location, intraoperative cardiovascular complications, pulmonary complications, and Acute Kidney Injury were not associated with length of stay in the ICU in bivariate and multivariate analysis.

Conclusion: Post-operative factors, cardiovascular complications, neurological complications, hypernatremia and low GCS are associated with prolonged ICU stay in patients following craniotomy surgery due to brain tumors.

Keywords: length of stay, Intensive Care Unit, craniotomy, brain tumor, predictor