Kesintasan dan Kualitas Hidup Pascakraniektomi Dekompresi pada Pasien Infark Arteri Serebri Media Maligna: Studi Multisenter = Survival and Functional Outcome after Decompressive Hemicraniectomy in Malignant Middle Cerebral Artery Infarction: Multicenter Study

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Abstrak

Stroke yang disebabkan karena gangguan perfusi otak merupakan penyebab utama disabilitas dan kematian di seluruh dunia. Komplikasi stroke dengan angka mortalitas tinggi yaitu edema luas akibat infark arteri serebri media/middle cerebral artery (MCA) maligna yang kemudian diikuti deteriorasi neurologis cepat dan berujung pada luaran yang buruk dengan angka kematian sebesar 80%. Kraniektomi dekompresi sebagai tatalaksana infark MCA maligna diketahui dapat meningkatkan probabilitas keselamatan hingga lebih dari 80%. Penelitian ini bertujuan untuk mengetahui angka kesintasan dan kualitas hidup pasien infark MCA maligna 1, 3, 6, dan 12 bulan pasca-operasi kraniektomi dekompresi di Indonesia, hubungan luaran dengan terapi reperfusi pendahulu, dan menganalisis faktor-faktor yang telah diketahui dapat mempengaruhi luaran, yaitu usia, waktu pembedahan, dan diameter anteroposterior kraniektomi. Penelitian ini bersifat kohort retrospektif melalui pengambilan data rekam medis pasien infark MCA maligna yang dilakukan tindakan kraniektomi dekompresi di Rumah Sakit Umum Pusat dr. Cipto Mangunkusumo (RSCM), Rumah Sakit Umum Pusat (RSUP) Fatmawati, dan Rumah Sakit Pusat Otak Nasional Prof. Dr. dr. Mahar Mardjono Jakarta (RS PON) pada tahun 2017-2022. Sebanyak 39 subjek masuk dalam kriteria inklusi. Dari seluruh subjek, sebanyak 51,3% subjek berusia <60 tahun, 48,7% dioperasi dalam waktu pembedahan <48 jam, 76,6% memiliki diameter kraniektomi 12-14 cm, dan 38,5% subjek mendapatkan terapi reperfusi pendahulu sebelum operasi. Dari hasil penelitian didapatkan 12 penyintas yang hidup pada akhir follow-up. Angka kesintasan pada bulan pertama sebesar 55% yang kemudian turun menjadi 36% pada 12 bulan follow-up (Kaplan-Meier). Dari 27 subjek yang meninggal, 17 subjek meninggal dalam bulan pertama perawatan pasca-operasi di rumah sakit (rentang 1-20 hari), sedangkan sisanya meninggal di luar perawatan rumah sakit. Penyebab tertinggi kematian yang diketahui yaitu infeksi. Dari 12 penyintas, 58% memiliki luaran fungsional yang buruk (modified Rankin scale 4-5) pada akhir follow-up. Tidak didapatkan adanya perbedaan signifikan angka kesintasan (p 0,779, log rank test) maupun luaran fungsional (p 0,929, Mann-Whitney test) pada kelompok yang mendapatkan terapi reperfusi maupun tidak. Dari analisis bivariat diketahui bahwa faktor usia, waktu pembedahan, dan diameter kraniektomi tidak berhubungan signifikan dengan kesintasan maupun luaran fungsional. Dari analisis multivariat dengan melibatkan faktor-faktor tambahan di luar faktor tersebut, diketahui jenis kelamin berhubungan signifikan terhadap luaran fungsional (p 0,032) sedangkan skor National Institutes of Health Stroke Scale (NIHSS) pra-operasi berhubungan secara signifikan dengan kesintasan (p 0,028) dan luaran fungsional (p 0,004). Dari penelitian ini diketahui bahwa angka kesintasan 12 bulan pasien infark MCA Universitas Indonesia viii maligna yang dilakukan kraniektomi dekompresi yaitu sebesar 36% dan mayoritas penyintas memiliki luaran fungsional buruk. Perlu dilakukan penelitian lebih lanjut dengan menyertakan kelompok kontrol pasien infark MCA maligna yang tidak dilakukan kraniektomi dekompresi namun mendapatkan terapi konservatif maksimal agar dapat

diketahui manfaat operasi melalui perbandingan luaran kedua kelompok tersebut.
..... Stroke caused by impaired brain perfusion is a major cause of disability and death worldwide. Stroke complication with high mortality rate is extensive edema due to malignant middle cerebral artery (MCA) infarction which is followed by rapid neurological deterioration and leads to poor outcomes with a mortality rate of 80%. Decompressive hemicraniectomy as a treatment for malignant MCA infarction has been known to increase the probability of survival by more than 80%. This study aims to determine the survival rate and functional outcome of patients with malignant MCA infarction in 1, 3, 6, and 12 months after decompressive hemicraniectomy in Indonesia, analyse impacts of prior reperfusion therapy to outcomes, and also analyse factors that are already known to affect outcome from literatures, which are age, timing of surgery, and anteroposterior craniectomy diameter. This study was a retrospective cohort by collecting medical record data of malignant MCA infarction patients who underwent decompressive hemicraniectomy at Cipto Mangunkusumo National General Hospital, Fatmawati General Hospital, and Mahar Mardjono Jakarta National Brain Center Hospital from 2017-2022. A total of 39 subjects were included, 51.3% of them were aged <60 years, 48.7% were operated within <48 hours of onset, 76.6% had a craniectomy diameter of 12-14 cm, and 38.5% received reperfusion therapy prior to surgery. Results of the study, 12 subjects survived at the end of follow-up. The survival rate at the first month was 55% which then decreased to 36% at 12 months follow-up (Kaplan-Meier). Of the 27 subjects who died, 17 subjects died within the first month of post-operative care in the hospital (interval 1-20 days), with infection as the leading cause of death, while the rest died outside of hospital care. Of the 12 survivors, 58% had poor functional outcomes (modified Rankin scale 4-5). There was no significant difference in survival rate (p 0.779, log rank test) and functional outcome (p 0.929, Mann-Whitney test) in the group receiving reperfusion therapy or not. From the bivariate analysis, it was found that age, timing of surgery, and craniectomy diameter were not significantly related to survival or functional outcome. From the multivariate analysis including other additional factors, it was found that sex was significantly related to functional outcome (p 0.032) while the pre-operative National Institutes of Health Stroke Scale (NIHSS) score was significantly related to survival (p 0.028) and functional outcome (p 0.004). From this study, it is known that the 12-month survival rate of malignant MCA infarction patients who underwent decompressive hemicraniectomy was 36% and the majority of survivors had poor functional outcomes. Further research is needed by including a control group of patients with malignant MCA infarction who did not undergo decompressive hemicraniectomy Universitas Indonesia x but received maximum conservative therapy in order to know the benefits of surgery by comparing the outcomes of the two groups.