

Serebrovasküler Hastalıklarda Kritik Bakım

48B

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ÖNEMLİ NOKTALAR

- 1 İnme Amerika Birleşik Devletleri (ABD)'nde özürlülüğe yol açan başlıca neden olmakla birlikte ölüm nedenleri arasında dördüncü sıradadır. ABD'de yıllık olarak meydana gelen 800.000 inmenin % 85'i Akut İskemik İnme (AIS)'dir.
- 2 Akut iskemik inmenin bakımıyla ilgili yoğun bakım sorunları, inmenin tanınması ve tanısının konulması, fibrinolitik ve/veya endovasküler tedavinin sağlanması, aynı zamanda tedavi sonrasında 24 saatlik tıbbi yönetim ve serebellar veya büyük hemisferik enfarktların (LHI'lar) tedavisini içermektedir.
- 3 İnmelerin klinik semptomları oldukça heterojen ve değişkendir ve Ulusal Sağlık İnme Enstitüsünün skalası (NIHSS) kullanılarak objektif olarak skorlanmıştır.
- 4 İntravenöz rekombinant doku plazminojen aktivatörü (IV-rtPA), kapsama/hariç tutma kriterlerini karşılayan AIS'li tüm hastalara mümkün olan en kısa sürede uygulanmalıdır.
- 5 Endovasküler tedavi (EVT); 17 yaşından büyük, internal karotid arter (ICA) veya M1 oklüzyonu olan, IV-rtPA alan ve 0-1 arasında bir prestok modifiye Rankin Skoru (mRS) na sahip, NIHSS 5'in üzerinde ve Alberta inme programı erken bilgisayarlı tomografi skoru (ASPECTS) 5'in üstünde ve evde en son bilinen iyi zamanlarından itibaren 6 saat içinde EVT'ye başlayabilen (örneğin kasık ponksiyonu) AIS hastalarında tavsiye edilmektedir.
- 6 Reperfüzyon tedavisi sırasında (IV-rtPA veya endovasküler) kan basıncı (BP) parametreleri dikkatle korunmalıdır (<180/105 mm Hg). Tüm antiplatelet ve antikoagülan ilaçlar en azından ilk 24 saat tutulmalı, IV-rtPA veya EVT'den 24 saat sonra hasta nörolojik olarak stabil durumda ise ve nörogörüntüleme infarktın hemorajik dönüşümünü göstermiyorsa aspirin verilmelidir.
- 7 LHI tedavisinin yönetimi; serebral ödem gelişimini en aza indirmeyi ve dekompresif hemikraniyektomi (DC) adaylarının belirlenmesini amaçlayan tedavileri içermektedir.
- 8 İntraserebral kanama (İKH) tedavisinin cerrahi seçeneklerinin yönetimi; pıhtı tahliyesini içeren veya içermeyen kraniyotomi ve intraventriküler kanamaya bağlı obstrüktif hidrosefali ortamında intraventriküler bir kateter yerleştirilmesi işlemlerini kapsayabilir.
- 9 İlk 6 saatte subaraknoid kanamalı hastalar için tedavi hedefleri; BP kontrolü, kardiyopulmoner stabilite, semptomatik hidrosefalinin düzeltilmesi, intrakranyal hipertansiyon tedavisi, herniasyon sendromlarının reversal tedavisi ve antifibrinolitik ilaçların değerlendirilmesidir.

REFERANSLAR

1. Wiley J. Acute ischemic stroke. In: Lee K, ed. *The Neuro ICU Book*. 1st ed. New York: McGraw Hill Medical; 2012.
2. Gross H, Guillems KP, Sung G. Emergency neurological life support: acute ischemic stroke. *Neurocrit Care*. 2015 Dec;23(Suppl 2):S94-S102.
3. Demaerschak BM, Kleindorfer DO, Adeoye OM, et al. Scientific rationale for the inclusion and exclusion criteria for intravenous alteplase in acute ischemic stroke. *Stroke*. 2016 Feb;47(2):581-641.
4. Powers WJ, Derdeyn CP, Biller J, et al. 2015 AHA/ASA focused update of the 2013 Guidelines for the Early Management of Patients with Acute Ischemic Stroke Regarding Endovascular Treatment. *Stroke*. 2015 Oct;46(10):3020-3035.
5. Jauch EC, Saver JL, Adams HP, et al. Guidelines for the early management of patients with acute ischemic stroke. *Stroke*. 2013 Mar;44(3):870-947.
6. Wijdicks EF, Sheth KN, Carter BS, et al. Recommendations for the management of cerebral and cerebellar infarction with swelling. *Stroke*. 2014 Apr;45(4):1222-1238.
7. Prabhakaran S, Ruff I, Bernstein R. Acute stroke intervention: a systematic review. *JAMA*. 2015;313(14):1451-1462.
8. Fernandes PM, Whiteley WN, Hart SR, et al. Stroke: mimics and chameleons. *Pract Neurol*. 2013 Feb;13(1):21-28.
9. Hemphill JC, 3rd, Bonovich DC, Besmertis L, et al. The ICH score: a simple, reliable grading scale for intracerebral hemorrhage. *Stroke*. 2001;32(4):891-897.
10. Yazbeck M, Rincon F, Mayer S. Intracerebral hemorrhage. In: Lee K, ed. *The Neuro ICU Book*. 1st ed. New York: McGraw Hill Medical; 2012.
11. Jauch EC, Pineda JA, Hemphill JC. Emergency neurological life support: intracerebral hemorrhage. *Neurocrit Care*. 2015 Dec;23(Suppl 2):S83-S93.
12. Hemphill JC, 3rd, Greenberg SM, Anderson CS, et al. Guidelines for the management of spontaneous intracerebral hemorrhage: a guideline for healthcare professionals from the American Heart Association/American Stroke Association. *Stroke*. 2015 Jul;46(7):2032-2060.
13. Chan S, Hemphill JC, 3rd. Critical care management of intracerebral hemorrhage. *Crit Care Clin*. 2014 Oct;30(4):699-717.
14. Delgado Almandoz JE, Schaefer PW, Goldstein JN, et al. Practical scoring system for the identification of patients with intracerebral hemorrhage at highest risk of harboring an underlying vascular etiology: the Secondary Intracerebral Hemorrhage Score. *AJNR AM J Neuroradiology*. 2010 Oct;31(9):1653-1660.
15. Qureshi AI, Palesch YY, Barsan WG, et al. Intensive blood-pressure lowering in patients with acute cerebral hemorrhage. *N Engl J Med*. 2016 Jun 8.
16. Anderson CS, Heeley E, Huang Y, et al. Rapid blood-pressure lowering in patients with acute intracerebral hemorrhage. *N Engl J Med*. 2013 Jun 20;368(25):2355-2365.
17. Tsivgoulis G, Katsnos AH, Butcher KS, et al. Intensive blood pressure reduction in acute intracerebral hemorrhage: a meta-analysis. *Neurology*. 2014 Oct 21;83(17):1523-1529.
18. Frontera JA, Lewin JJ, Rabinstein AA, et al. Guidelines for reversal of antithrombotics in intracranial hemorrhage. *Neurocrit Care*. 2016;24:6-46.
19. Steiner T, Poli S, Griebel M, et al. Fresh frozen plasma versus prothrombin complex concentrate in patients with intracranial haemorrhage related to vitamin K antagonists (INCH): a randomized trial. *Lancet Neurol*. 2016;15:566-573.
20. Vandelli L, Marietta M, Gambini M, et al. Fibrinogen decrease after intravenous thrombolysis in ischemic stroke patients is a risk factor for intracerebral hemorrhage. *J Stroke CV Dis*. 2015 Feb 24(2):394-400.
21. Manning L, Hirakawa Y, Arima H, et al. Blood pressure variability and outcome after acute intracerebral hemorrhage: post-hoc analysis of INTERACT-2, a randomized controlled trial. *Lancet Neurol*. 2014;13:364-373.
22. Baharoglu MI, Cordonniet C, Al-Shahi Salman R, et al. Platelet transfusion versus standard care after acute stroke due to spontaneous cerebral haemorrhage associated with antiplatelet therapy (PATCH): a randomized, open-label, phase 3 trial. *Lancet Neurol*. Online May 10, 2016.
23. Kuramatsu JB, Gerner ST, Schellinger PD, et al. Anticoagulant reversal, blood pressure levels, and anticoagulant resumption in patients with anticoagulation-related intracerebral hemorrhage. *JAMA*. 2015;313(8):824-836.
24. Mendelow AD, Gregson BA, Rowan EN, et al. STICH II Investigators. Early surgery versus initial conservative treatment in patients with spontaneous supratentorial lobar intracerebral haematomas (STICH II): a randomised trial. *Lancet*. 2013;382(9890):397-408.
25. Mendelow AD, Gregson BA, Fernandes HM, et al; STICH investigators. Early surgery versus initial

- conservative treatment in patients with spontaneous supratentorial intracerebral haematomas in the International Surgical Trial in Intracerebral Haemorrhage (STICH): a randomised trial. *Lancet*. 2005;365(9457):387-397.
26. Prasad K, Mendelow AD, Gregson B. Surgery for primary supratentorial intracerebral haemorrhage. *Cochrane Database Syst Rev*. 2008;(4):CD000200.
 27. Wang JW, Li JP, Song YL, et al. Stereotactic aspiration versus craniotomy for primary intracerebral hemorrhage: a meta-analysis of randomized controlled trials. *PLoS ONE*. 2014;9(9):e107614.
 28. Ziai W, Nyquist P, Hanley D. Surgical strategies for spontaneous intracerebral hemorrhage. *Semin Neurol*. 2016;36:261-268.
 29. Lee K. Subarachnoid Hemorrhage. In: Lee K, ed. *The Neuro ICU Book*. 1st ed. New York: McGraw Hill Medical; 2012.
 30. Edlow JA, Figaji A, Samuels O. Emergency neurological life support: subarachnoid hemorrhage. *Neurocrit Care*. 2015 Dec;23(Suppl 2):S103-S109.
 31. Connolly ES, Rabinstein AA, Carhuapoma JR, et al. Guidelines for the management of aneurysmal subarachnoid hemorrhage. *Stroke*. 2012 Jun;43(6):1711-1737.
 32. Diringer MN, Bleck TP, Claude Hemphill J, 3rd, et al. Critical care management of patients following aneurysmal subarachnoid hemorrhage: recommendations from the Neurocritical Care Society's Multidisciplinary Consensus Conference. *Neurocrit Care*. 2011 Sep;15(2):211-240.
 33. Rinkel GJ, Djibuti M, Algra A, et al. Prevalence and risk of rupture of intracranial aneurysms: a systematic review. *Stroke*. 1998;29:251-256.
 34. Wiebers DO, Whisnant JP, Huston J III, et al. International Study of Unruptured Intracranial Aneurysms Investigators. Unruptured intracranial aneurysms: natural history, clinical outcome, and risks of surgical and endovascular treatment. *Lancet*. 2003;362:103-110.
 35. Rosengart AJ, Schultheiss KE, Tolentino J, Macdonald RL. Prognostic factors for outcome in patients with aneurysmal subarachnoid hemorrhage. *Stroke*. 2007; 38(8):2315-2321.
 36. Kreiter KT, Rosengart AJ, Claassen J, Fitzsimmons BF, Peery S, Du YE. Depressed mood and quality of life after subarachnoid hemorrhage. *J Neurol Sci*. 2013 Dec 15;335(1-2):64-71.
 37. Ingall T, Asplundh K, Mähönen M, et al. A multinational comparison of subarachnoid hemorrhage in the WHO MONICA stroke study. *Stroke*. 2000;31:1054-1061.
 38. Le Roux AA, Wallace MC. Outcome and cost of aneurysmal subarachnoid hemorrhage. *Neurosurg Clin N Am*. 2010;21:235-246.
 39. Hunt WE, Hess RM. Surgical risk as related to time of intervention in the repair of intracranial aneurysms. *J Neurosurg*. 1968;28(1):14-20.
 40. Perry JJ, Stiell IG, Sivilotti ML, et al. Clinical decision rules to rule out subarachnoid hemorrhage for acute headache. *JAMA*. 2013;310(12):1248-1255.
 41. Frontera JA, Claassen J, Schmidt JM, et al. Prediction of symptomatic vasospasm after subarachnoid hemorrhage: the modified fisher scale. *Neurosurgery*. 2006 Jul;59(1):21-27.
 42. Claassen J, Bernardini GL, Kreiter K, et al. Effect of cisternal and ventricular blood on risk of delayed cerebral ischemia after subarachnoid hemorrhage. *Stroke*. 2001;32:2012-2020.
 43. Phillips TJ, Dowling RJ, Yan B, et al. Does treatment of ruptured intracranial aneurysms within 24 hours improve clinical outcome? *Stroke*. 2011;42:1936-1945.
 44. de Gans K, Nieuwkamp DJ, Rinkel GJ, et al. Timing of aneurysm surgery in subarachnoid hemorrhage: a systematic review of the literature. *Neurosurgery*. 2002;50:336-340.
 45. Rosengart AJ, Huo DZ, Tolentino J, Novakovic RL, Frank JI, Goldenberg FD, Macdonald RL. Outcome in patients with subarachnoid hemorrhage treated with antiepileptic drugs. *J Neurosurg*. 2007;107(2):253-260.
 46. Dorhout Mees S, Rinkel GJE, Feigin VL, Algra A, van den Bergh WM, Vermeulen M, van Gijn J. Calcium antagonists for aneurysmal subarachnoid haemorrhage. *Cochrane Database of Systematic Reviews* 2007, Issue 3. Art. No.: CD000277. DOI: 10.1002/14651858.CD000277.pub3.