



# SPONTAN İNTRASEREBRAL KANAMALARIN ACİL YÖNETİMİ

Selim ŞEKER<sup>1</sup>

## GİRİŞ

Spontan İntraserebral kanama (SISK) dünyada her yıl yaklaşık 2 milyon insanı etkileyen en ciddi ve en az tedavi edilebilir inme şeklidir (1). Acil servise başvuran serebrovasküler olayların (inme) en sık ikinci nedenini oluştururken (%10-%20; ciddi mortalite ve morbidite nedenlerin başında gelmektedir ve inmeye bağlı görülen ölümlerin yaklaşık %49'unu oluşturmaktadır (2)(3). Ekonomik açıdan bakıldığından da hemorajik inme tedavisi iskemik inmenin çok üzerindedir (4). Klinik olarak iki çeşit hemorajik inme görülmektedir. Birincisi derin beyin yapıları (thalamus, putamen) veya beyin sapı, cerebellum gibi beyin dokusunun belirli spesifik bölgelerinde olan intraparankimal kanama; bir diğer türü ise subaraknoid aralıktaki bulunan vasküler yapıların rüptürü ile izlenen subaraknoid kanamadır (5). Bu bölümde intraparankimal kanama öncelikli olarak ele alınacaktır.

SISK etiyolojisine bakıldığından serebral amiloid anjiopati ve sistemik arterial hipertansiyon en önemli neden olarak karşımıza çıkmaktadır (6). Diğer etiyolojik nedenler tablo 1'de belirtilmiştir.

**Tablo 1. Etiyolojik nedenler**

Sistemik hipertansiyon

Serebral amiloid anjiopati

Vasküler malformasyonlar

Serebral sinüs ven trombozu

Vaskülitler

Antitrombotik kullanımı

<sup>1</sup> Uzm. Dr., Dr. Selahattin Cizrelioğlu Devlet Hastanesi, Beyin ve Sinir Cerrahisi Bölümü  
selimseker1989@hotmail.com

ze kontrollü çalışmalar göz önüne alındığında, fonksiyonel iyileşme için olumlu sonuca varılamadığı göz önünde bulundurulmalıdır (51). Bu nedenle medikal ve cerrahi tedaviler için yapılan çalışmaların yanında, bu inme çeşidinin altta yatan risk faktörleri için daha fazla çalışma yapılmalıdır.

## KAYNAKLAR

1. Krishnamurthi RV, Feigin VL, Forouzanfar MH, et al. Global and regional burden of first-ever ischaemic and haemorrhagic stroke during 1990–2010: findings from the Global Burden of Disease Study 2010. *Lancet Glob Health* 2013; 1: e259–81
2. An SJ, Kim TJ, Yoon BW: Epidemiology, Risk Factors, and Clinical Features of Intracerebral Hemorrhage: An Update. *J Stroke*. 2017; 19(1): 3–10
3. Feigin VL, Norrvling B, Mensah GA. Global burden of stroke. *Circul Res* 2017; 120: 439–448
4. Goeree R, Blackhouse G, Petrovic R, et al Cost of stroke in Canada: a 1-year prospective study. *J Med Econ* 2008; 8: 147–167
5. De Herdt V, Dumont F, Henon H, et al. Early seizures in intracerebral hemorrhage: incidence, associated factors, and outcome. *Neurology* 2011;77(20): 1794–800
6. Yamada M. Cerebral amyloid angiopathy: emerging concepts. *J Stroke*. 2015;17:17–30
7. Muntner P, Carey RM, Gidding S, et al.: Potential US Population Impact of the 2017 ACC/AHA High Blood Pressure Guideline. *Circulation*. 2018; 137(2): 109–18
8. Mayer SA, Rincon F. Treatment of intracerebral haemorrhage. *Lancet Neurol*. 2005;4(10):662–672
9. Khan NI, Siddiqui FM, Goldstein JN, et al.: Association Between Previous Use of Antiplatelet Therapy and Intracerebral Hemorrhage Outcomes. *Stroke*. 2017; 48(7): 1810–7
10. Renoux C, Vahey S, Dell'Aniello S, et al.: Association of Selective Serotonin Reuptake Inhibitors With the Risk for Spontaneous Intracranial Hemorrhage. *JAMA Neurol*. 2017; 74(2): 173–180.) Endres M, Nolte CH, Scheitz JF: Statin Treatment in Patients With Intracerebral Hemorrhage. *Stroke*. 2018; 49(1): 240–6.
11. Charidimou C, Boulouis G, Roongpiboonsopit D, et al. Cortical superficial siderosis multifocality in cerebral amyloid angiopathy: a prospective study. *Neurology* 2017; 89: 2128–35
12. Moulin S, Labreuche J, Bombois S, et al. Dementia risk after spontaneous intracerebral haemorrhage: a prospective cohort study. *Lancet Neurol* 2016; 15: 820–29.
13. Charidimou A, Gang Q, Werring DJ: Sporadic cerebral amyloid angiopathy revisited: recent insights into pathophysiology and clinical spectrum. *J Neurol Neurosurg Psychiatry*. 2012; 83(2): 124–37
14. Heeley E, Anderson CS, Woodward M, et al. Poor utility of grading scales in acute intracerebral hemorrhage: results from the INTERACT2 trial. *Int J Stroke* 2015; 10: 1101–7
15. Hemphill JC 3rd, Bonovich DC, Besmertis L, et al. The ICH score: a simple, reliable grading scale for intracerebral hemorrhage. *Stroke* 2001;32(4):891–7
16. Meyer DM, Begtrup K, Grotta JC. Recombinant activated factor VIIIITHI. Is the ICH score a valid predictor of mortality in intracerebral hemorrhage? *J Am Assoc Nurse Pract* 2015;27(7):351–5
17. Chalela JA, Kidwell CS, Nentwich LM, Luby M, Butman JA, Demchuk AM, et al. Magnetic resonance imaging and computed tomography in emergency assessment of patients with suspected acute stroke: a prospective comparison. *Lancet*. 2007;369(9558):293-8
18. 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;46(7):2032–60
19. Rodrigues MA, Samarasekera N, Lerpiniere C, et al. The Edinburgh CT and genetic diagnostic

- criteria for lobar intracerebral haemorrhage associated with cerebral amyloid angiopathy: model development and diagnostic test accuracy study. *Lancet Neurol* 2018; 17: 232–40
- 20. Safatlı DA, Gunther A, Schlattmann P, et al. Predictors of 30-day mortality in patients with spontaneous primary intracerebral hemorrhage. *Surg Neurol Int* 2016;7(Suppl 18):S510–7
  - 21. Kothari RU, Brott T, Broderick JP, et al. The ABCs of measuring intracerebral hemorrhage volumes. *Stroke* 1996;27(8):1304–5
  - 22. From Morotti A, Goldstein JN. Diagnosis and management of acute intracerebral hemorrhage. *Emerg Med Clin North Am* 2016;34(4):883–99
  - 23. Smith EE, Nandigam KR, Chen YW, et al. MRI markers of small vessel disease in lobar and deep hemispheric intracerebral hemorrhage. *Stroke* 2010; 41: 1933–38
  - 24. Osborn A. (2015). Osborn Beyin Görüntüleme, Patoloji ve Anatomi. ( Mehmet Tekşam, Banu Çakır, Çev. Ed.). Ankara: Dünya Tip Kitapevi
  - 25. Kamel H, Navi BB, Hemphill JC, 3rd. A rule to identify patients who require magnetic resonance imaging after intracerebral hemorrhage. *Neurocrit Care*. 2013;18(1):59–63.
  - 26. van Asch CJ, Velthuis BK, Rinkel GJ, et al. Diagnostic yield and accuracy of CT angiography, MR angiography, and DSA for detection of macrovascular causes of intracerebral haemorrhage: prospective, multicentre cohort study. *BMJ* 2015; 351: h5762
  - 27. Bekelis K, Desai A, Zhao W, Gibson D, Gologorsky D, Eskey C, et al. Computed tomography angiography: improving diagnostic yield and cost effectiveness in the initial evaluation of spontaneous nonsubarachnoid intracerebral hemorrhage. *J Neurosurg*. 2012;117(4):761–6
  - 28. Kranz PG, Malinzak MD, Amrhein TJ. Approach to imaging in patients with spontaneous intracranial hemorrhage. *Neuroimaging Clin N Am*. 2018;28(3):353– 374
  - 29. Demchuk AM, Dowlatshahi D, Rodriguez-Luna D, et al. Prediction of haematoma growth and outcome in patients with intracerebral haemorrhage using the CTangiography spot sign (PREDICT): a prospective observational study. *Lancet Neurol*. 2012;11(4):307–314.
  - 30. Balami JS, Buchan AM. Complications of intracerebral haemorrhage. *Lancet Neurol*. 2012;11(1):101–118.
  - 31. Dowlatshahi D, Demchuk AM, Flaherty ML, et al. Defining hematoma expansion in intracerebral hemorrhage: relationship with patient outcomes. *Neurology* 2011; 76: 1238–1244.
  - 32. Li Q, Zhang G, Xiong X, et al.: Black Hole Sign: Novel Imaging Marker That Predicts Hematoma Growth in Patients With Intracerebral Hemorrhage. *Stroke*. 2016; 47(7): 1777–81.
  - 33. 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): 824–36.
  - 34. Al-Shahi Salman R, Frantzias J, Lee RJ, et al. Absolute risk and predictors of the growth of acute spontaneous intracerebral haemorrhage: a systematic review and metaanalysis of individual patient data. *Lancet Neurol* 2018; 17: 885–894
  - 35. Butcher KS, Jeerakathil T, Hill M, et al.: The Intracerebral Hemorrhage Acutely Decreasing Arterial Pressure Trial. *Stroke*. 2013; 44(3): 620–6.
  - 36. Qureshi AI, Palesch YY, Barsan WG, et al. Intensive blood-pressure lowering in patients with acute cerebral hemorrhage. *New Engl J Med* 2016; 375: 1033–1043
  - 37. Moualla TJ, Wang X, Martin RH, et al. Blood pressure control and clinical outcomes in acute intracerebral haemorrhage: a preplanned pooled analysis of individual participant data. *Lancet Neurol* 2019; 18: 857–864
  - 38. Shoamanesh A, Lindsay M P, Castellucci L A, Canadian stroke best practice recommendations: Management of Spontaneous Intracerebral Hemorrhage 7th Edition Update 2020. *International Journal of Stroke*, 2021, Vol. 16(3) 321–341. DOI: 10.1177/1747493020968424
  - 39. Thompson BB, Bejot Y, Caso V, et al. Prior antiplatelet therapy and outcome following intracerebral hemorrhage: a systematic review. *Neurology* 2010; 75: 1333–42
  - 40. Baharoglu MI, Cordonnier 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 randomised, open-label, phase 3 trial. *Lancet* 2016; 387: 2605–13
41. Frontera JA, Lewin JJ 3rd, Rabinstein AA, et al.: Guideline for Reversal of Antithrombotics in Intracranial Hemorrhage: Executive Summary. A Statement for Healthcare Professionals From the Neurocritical Care Society and the Society of Critical Care Medicine. *Crit Care Med.* 2016; 44(12): 2251–7
  42. Andrews CM, Jauch EC, Hemphill JC, 3rd, Smith WS, Weingart SD. Emergency neurological life support: intracerebral hemorrhage. *Neurocrit Care.* 2012;17 Suppl 1:S37–46.
  43. Schreuder FH, Sato S, Klijn CJ, Anderson CS. Medical management of intracerebral haemorrhage. *J Neurol Neurosurg Psychiatry* 2017; 88: 76–84
  44. Beghi E, D'Alessandro R, Beretta S, Consoli D, Crespi V, Delaj L, et al. Incidence and predictors of acute symptomatic seizures after stroke. *Neurology.* 2011;77(20):1785–93.
  45. Passero S, Rocchi R, Rossi S, Olivelli M, Vatti G. Seizures after spontaneous supratentorial intracerebral hemorrhage. *Epilepsia.* 2002;43(10):1175–80
  46. Haapaniemi E, Strbian D, Rossi C, et al. The CAVE score for predicting late seizures after intracerebral hemorrhage. *Stroke* 2014; 45: 1971–76.
  47. Xi G, Keep RF, Hoff JT. Mechanisms of brain injury after intracerebral haemorrhage. *Lancet Neurol* 2006; 5: 53–63
  48. Gregson BA, Broderick JP, Auer LM, Batjer H, Chen XC, Juvela S, et al. Individual patient data subgroup meta-analysis of surgery for spontaneous supratentorial intracerebral hemorrhage. *Stroke.* 2012;43(6):1496–504
  49. Morgenstern LB, Demchuk AM, Kim DH, Frankowski RF, Grotta JC. Rebleeding leads to poor outcome in ultra-early craniotomy for intracerebral hemorrhage. *Neurology.* 2001;56(10):1294–9.
  50. Hallevi H, Albright KC, Aronowski J, Barreto AD, Martin- Schild S, Khaja AM, et al. Intraventricular hemorrhage: Anatomic relationships and clinical implications. *Neurology.* 2008;70(11):848–52
  51. Sembill JA, Gerner ST, Volbers B, et al.: Severity assessment in maximally treated ICH patients: The max-ICH score. *Neurology.* 2017; 89(5): 423–31.