Bölüm
15

KİBAS VE NÖROONKOLOJİK ACİLLERE YAKLAŞIM

Tezcan ÇALIŞKAN[1]

GİRİŞ

Kafa içi basıncı; kraniyum içindeki beyin parenkim dokusu, beyin omurilik sıvısı(BOS), arteriyal ve venöz kanın oluşturduğu toplam hacmin sonucu meydana gelen basınçtır(22). Kafa içi basınç artışı sendromu(KİBAS), intrakraniyal içeriğin hacminin artışı ile karakterize nörolojik tablodur(22,23). En sık kafa travmasına bağlı ortaya çıkmakla beraber beyin tümörleri ve metastazları, intrakraniyal kanama ve nörolojik olmayan hastalıklar sonucu da KİBAS gelişebilir. Ortak patofizyolojik süreç sonucu kafa içi hacim artışı ve kafa içi basıncını düzenleyen mekanizmaların bozukluğu yada yetersizliği sonucunda ortaya çıkar(24,25).

KİBAS etyoloji

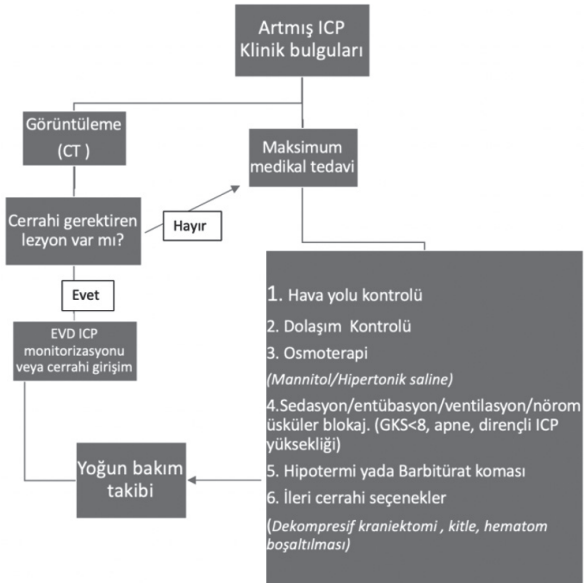
KİBAS'ın birçok nedeni vardır. İntrakraniyal basınç (ICP) yüksekliği yapan nedenleri basit olarak kategorize edersek(26,27,37).

Kafa içi nedenlere bağlı ICP artışı

1. Travmatik beyin yaralanması
2. Kafa içi hematomlar
3. İnternal karotid arter veya orta serebral arter gibi büyük damar tıkanmasına bağlı iskemik inme
4. Beyin neoplazmları(kitle etkisi, vazojenik ödem)
5. Hidrosefali
6. Diffüz serebral ödem
7. İdiyopatik ödem(psödotümör serebri)

Ekstrakraniyal nedenlere baglı ICP artışı nedenleri; hava yollarında tıkanma, hipoksi veya hiperkarbi, postür, ateş, nöbet, hipertansiyon veya hipotansiyon, ilaç

[1] Dr. Öğr. Üyesi Tezcan ÇALIŞKAN Namık Kemal Üniversitesi Tıp Fakültesi Beyin ve Sinir Cerrahisi Anabilim Dalı dtzcan_07@hotmail.com



Şekil 4: KİBAS tedavisine genel yaklaşım algoritması.

KAYNAKLAR

1. Mut M, Shaffrey ME, Schiff D: Altered consciousness associated with brain neoplasms. Handbook of Clinical Neurology Vol.90,Ch 15,pp.265-281,2008
2. Raslan A, Bhardwaj A: Medikal management of cerebral edema.Neurosurg Focus 22(5):1-12,2007
3. Winn RH: Yuomans Neurological Surgery Fifht Edition,pp.5019-5296,2004.
4. Werner C, Engelhard K: Pathophysiology of traumatic brain injury. Br J Anaesthesia 99(1):4-9,2007
5. Juul N, Morris GF, Marshall SB, et al:Intracranial hypertension and cerebral perfusion pressure: influence on neurological deterioration and outcome in severe head injury.The Executive Committee of the International Selfotel Trial. J Neurosurg 92(1):1-6,2000.
6. Littlejohns L, Bader MK: Prevention of secondary brain injury: targeting technology.AACN Clinical Issues 16(4):501-514,2005
7. Mahaley MS, Metlin C,Natarajan N,et al:National survey of patterns of care for brain tumor patients. J Neurosurg 71:826-36,1989.
8. Whittle I R, Pringle A-M,Taylor R: Effects of resective surgery for left sided intracranial tumors on language function: A prospective study .Lancet 351:1014-8,1998
9. Chalela JA, Kasner SE: Evaluation and treatment of altered consciousness.In HH Batjer,CM Loftus (Eds).Textbook of Neurological Surgery .Lippincott Williams and Wilkins, Philadelphia pp.246-259,2003.
10. Thapar K, Rutka JT, Laws ER Jr.:Brain edema,increased intracranial pressure, vascular effects, and other epiphenomena of brain tumors.In Kaye AH, Laws ER (Eds).Brain Tumors :An encyclopedic approach .Churchill Livingstone, Edinburg,pp.163-189,1995.
11. Roberts I, Yates D, Sandercock P, et al.Effect of intravenous corticosteroids on death within 14 days in 10008 adults with clinically significant head injury (MRC CRASH trial): randomised placebo-controlled trial.Lancet 2004;364(9442):1321-1328.doi:10.1186/cc3813.
12. Ryken TC, McDermott M,Robinson PD,et al. The role of steroids in the management of brain

metastases:a systematic review and evidence-based clinical practice guideline.J Neurooncol 2010;96(1):103-114.doi:10.1007s11060-009-0057-4.
13. Bebawy JF. Perioperative steroids for peritumoral intracranial edema:a review of mechanisms,efficacy,and side effects.J Neurosurg Anesthesiol 2012;24(3):173-177.doi:10.1097/ANA.0b013e3182578bb5.
14. Proust F, Hannequin D, Bellow F, et al. Stressinduced pituitary apoplexy in 2 cases. Neurochirurgie. 1995;41(5):3726.
15. Wakai S, Fukushima T, Teramoto A,et al: Pituitary apoplexy:Its incidence and clinical significance.J Neurosurg 55:187-193,1981
16. Baldwin KJ, Zivkovic SA, Lieberman FS. Neurologic emergencies in patients who have cancer: diagnosis and management. Neurol Clin 2012;30(1):101-128
17. Changa AR, Czeisler BM, Lord AS. Management of Elevated Intracranial Pressure: a Review. Curr Neurol and Neurosci Rep 2019 Nov 26;19(12):99. doi: 10.1007/s11910-019-1010-3.
18. Maiuri F, D'Andrea F, Gallicchio B: Intracranial haemorrhages in metastatic brain tumors. J Neurosurg Sci 29: 37-41,1985
19. Schrader B, Barth H, Lang EW: Spontaneous intracranial haematomas caused by neoplasms. Acta Neurochir (Wien) 142:979-985,2000.
20. Kidd D, Plant GT, Scaravilli F : Metastatic choricarcinoma presenting as multiple intracerabral haemorrhages : the role of imaging the elucidiation of the pathology. J Neurol Neurosurg Psychiatry 65:939-941,1998
21. Tung GA, Julius BD, Rogg JM: MRI of intraserebral hematoma. Value of vasogenic edema ratio for predicting the cause. Neuroradiology 45:357-362,2003
22. Castillo LR, Robertson CS. Management of intracranial hypertension. Crit Care Clin 2007;22:713-732
23. Dennis LJ, Mayer SA. Diagnosis and management of increased intracranial pressure. Neurol India 2001;49(Suppl 1): 37-50
24. Betz AL, Iannotti F, Hoff JT. Brain edema:a classification based on blood-brain barrier integrity. Cerebrovasc Brain Metab Rev 1989;1(2):133-154
25. Biousse V, Ameri A, Bousser MG. Isolated intracranial hypertension as the only sign of cerebral venous thrombosis.Neurology 1999;53(7):1537-42
26. Iencean SM, Ciurea AV.Intracranial hypertension: classification and patterns of evolution. J Med Life 2008;1(2):101-7
27. Iencean SM. A new classification and a synergetical pattern in intracranial hypertension. Med Hypotheses 2002;58(2):159-63
28. Singhi SC, Tiwari L. Management of intracranial hypertension. Indian J Pediatr 2009;76:519-29
29. Steiner LA, Andrews PJ. Monitoring the injured brain: ICP and CBF. Br J Anaesth 2006;97(1):26-38
30. Bershad EM, Humphreis WE 3rd,Suarez JI. Intracranial hypertension. Semin Neurol 2008;28(5):690-702.
31. Bobek MP, Hoff JT. Brain edema and tumor –host interactions. In: Winn HR, ed. Yuomans Neurological Surgery.5 th ed. Philadelphia: Saunders;2004.p.791-805.
32. Swiercz M, Mariak Z, Krejza J,et al, İntracranial pressure processing with artificial neural network: prediction of ICP trends. Acta Neurochir (Wien)2000;142:401-6
33. Davson H, Hollingsworth G, Segal MB. The mechanism of drainage of the cerebrospinal fluid. Brain 1970;93(4):665-78
34. Czosnyka M, Richards HK, Czosnyka Z, et al. Vascular components of cerebrospinal fluid compensation. J Neurosurg 1999;90(4):752-9
35. Stevens RD, Huff JS, Duckworth J,et al. Emergency neurological life support: intracranial hypertension and herniation. Neurocit Care 2012;17:S60-5
36. Scott BJ. Neuro-Oncologic Emergencies. Semin Neurol 2015;35(6):675-82
37. Freeman DW. Management of İntracranial pressure .Continuum (Minneap Minn) 2015;21(5):1299-1323

38. Pollay M. Blood-brain barrier; cerebral edema. In: Wilkins RH, Rengachary SS, eds. Neurosurgery. New York: McGraw Hill; 1996.p. 335-44
39. Behrens PF, Ostertag CB, Warnke PC. Regional cerebral blood flow in peritumoral brain edema during dexamethasone treatment: a xenon-enhanced computed tomographic study. Neurosurgery 1998; 43:235-40
40. Wen PY, Schiff D, Kesari S, et al. Medical management of patients with brain tumors. J Neurooncol 2006;80:313-32
41. Inamasu J, Nakamura Y, Saito R, et al. Rebleeding from a primary brain tumor manifesting as intracerebral hemorrhage. Case report. Clin Neurol Neurosurg 2005;108:105-8
42. Singh RVP, Prusmack CJ, Morcos JJ. Spontaneous intracerebral hemorrhage: non-arteriovenous malformations, nonaneurysm. In: Winn HR, ed. Youmans Neurological Surgery, 5th ed. Philadelphia: Saunders; 2004. p.1733-68.
43. Kadıoğlu HH. Aydın İH. Yetişkinlerde spontan intraserebral hematom. Türkiye Klinikleri J Surg Med Sci 2006;2:104-9
44. Castel JP, Kissel P. Spontaneous intracerebral and infratentorial hemorrhage. In: Youmans JR, ed. Youmans Neurological Surgery,3th ed. Philadelphia: WB Saunders;1990.p.1890-917
45. Woo D, Broderick JP. Spontaneous intracerebral hemorrhage: epidemiology and clinical presentation. Neurosurg Clin N Am 2002;13:265-79
46. Hallevy C, Ifergane G, Kordysh E, Herishanu Y. Spontaneous supratentorial intracerebral hemorrhage. Criteria for short-term functional outcome prediction. J Neurol 2002;249:1704-9
47. Ayuk J, McGregor EJ, Mitchell RD, Gittoes NJ. Acute management of pituitary apoplexysurgery or conservative management? Clin Endocrinol. 2004;61:74752.
48. Klatzo I. Presidental address.Neuropathological aspects of brain edema. J Neuropathol Exp Neurol.1967;26(1):1-14
49. Long DM: Capillary ultrastructure in human metastatic brain tumors. J Neurosurg 51:53-58,1979
50. Thrane AS, Thrane VG, Nedergaard M. Drowning stars:Reassesing the role of astrocytes in brain edema. Trends Neurosci 2014;37(11):620-8
51. Wong FWH. Prevention of secondary brain injury. Crit Care Nurse 2000;20:18-27
52. Stubgen J-P, Caronna JJ, Coma. Critical Care Medicine: Principles of Diagnosis and Management in the Adult. In: Parillo JE, Dellinger RP, eds. St Louis, Mo: CV Mosby Inc;2002. p.1259-77
53. Bader MK, Littlejohns LR, eds. Core Curriculum for Neuroscience Nursing. 4 th ed. Chicago, III:American Association of Neuorscience Nurses. St Louis, Mo: WB Saunders;2004.
54. Rajasekaran S. Vanderpump M. Baldeweg S, et al. UK guidelines for the management of pituitary apoplexy. Clin Endocrinol (Oxf).2011;74:9-20
55. Oruçkaptan H, Özcan OE. Pituiter apopleksi ve acil hipofiz cerrahisi. Editörler; Ziyal Mİ, ErbaşT. Hipofiz adenomları, 1.Baskı. Hacettepe Üniversitesi Hastaneleri Basımevi.2008:268-280
56. Randall BR, Couldwell WT. Apoplexy in pituitary microadenomas. Neurochir. 2010;152:1737-40.
57. Liigant A, Haldre S, Oun A, et al. Seizure disorders in patients with brain tumors. Eur Neurol 2001;45:46-51
58. Spencer DD, Spencer SS, Mattson RH, Williamson PD. Intracerebral masses in patients with intractable partial epilepy. Neurology 1984;34:432-6
59. Provenzale JM. Imaging of traumatic brain injury: a review of the recent medical literature. AJR Am J Roentgenol 2010;194(1):16-9