

BAKI NOKTASINDA BAŞ ACIL USG

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Dr. Cemil KAVALCI
Dr. Ömer SALT

Baskent Üniversitesi Acil Tıp AD
Trakya Üniversitesi Acil Tıp AD

Teknik: Transkraniyal dopplerde (TKD) 2 MHz düşük dalga frekanslı mikroişlemci kontrollü prob kullanılır (Resim 1). Yüzeysel pencere ayarlanır.

Hasta sedye üzerinde sırt üstü pozisyonda yatar, USG cihazı hasta yatağının başına alınır.



▲ Resim 1: Transkraniyal Doppler Ultrason cihazı ve probu.

Düzensiz Ritim Gözlenen Durumlar: Atriyal fibrilasyon gibi kalp ritim bozuklukları transkranial dopplerde değişik akım görüntülerine neden olabilir. Bu gibi durumlarda akım şiddetini değerlendirmede değişik paramterelerden faydalanılır.

Serebral Dolaşım Arresti (Beyin Ölümü): Beyin ölümü tanısında çok önemli bir parametre olan serebral dolaşım arresti, transkranial dopplerde diyastolik geri dönüşe karşı gelişen yüksek düzeyde direnç sonrası kan akımının ortadan kalkması ile kendini gösterir. Beyin ölümü tanısında transkranial doppler genelde yardımcı bir tanı aracı olarak kullanılır ⁽¹⁵⁾.

Kaynaklar

1. Santalucia P, Feldmann E The basic transcranial Doppler examination, technique and anatomy. In: Babikian V, Wechsler L (eds) The basic transcranial Doppler examination, technique and anatomy. Butterworth-Heinemann, 1999; Woburn: pp 13–33
2. Maeda H, Matsumoto M, Handa N, Hougaku H, Ogawa S, Itoh T, Tsukamoto Y, Kamada T. Reactivity of cerebral blood flow to carbon dioxide in various types of ischemic cerebrovascular disease: evaluation by the transcranial Doppler method. Stroke 1993;24:670–675
3. Muttaqin Z, Uozumi T, Kuwabara S, Arita K, Kurisu K, Ohba S, Kohno H, Ogasawara H, Ohtani M, Mikami T. Hyperaemia prior to acute cerebral swelling in severe head injuries: the role of transcranial Doppler monitoring. Acta Neurochir (Wien) 1993;123:76–81
4. Zurynski YA, Dorsch NW, Fearnside MR. Incidence and effects of increased cerebral blood flow velocity after severe head injury: a transcranial Doppler ultrasound study II. Effect of vasospasm and hyperemia on outcome. J Neurol Sci 1995;134:41–46
5. Goraj B, Rifkinson-Mann S, Leslie DR, Lansen TA, Kasoff SS, Tenner MS. Correlation of intracranial pressure and transcranial Doppler resistive index after head trauma. AJNR Am J Neuroradiol 1994;15:1333–1339
6. Giller CA, Purdy P, Giller A, Batjer HH, Kopitnik T. Elevated transcranial Doppler ultrasound velocities following therapeutic arterial dilation. Stroke 1995;26:123–127
7. Bellner J, Romner B, Reinstrup P, Kristiansson KA, Ryding E, Brandt L. Transcranial Doppler sonography pulsatility index (PI) reflects intracranial pressure (ICP). Surg Neurol 2004;62:45–51
8. Seiler R, Grolimund P, Huber P. Transcranial Doppler sonography. An alternative to angiography in the evaluation of vasospasm after subarachnoid hemorrhage. Acta Radiol Suppl 1986;369:99–102

9. Jarus-Dziedzic K, Juniewicz H, Wronski J, Zub WL, Kasper E, Gowacki M, Mierzwa J. The relation between cerebral blood flow velocities as measured by TCD and the incidence of delayed ischemic deficits. A prospective study after subarachnoidhemorrhage. *Neurol Res* 2002;24:582-592
10. Edelman SK. Doppler in Understanding Ultrasound Physics. 3rded. ESP, Inc. Woodlands, Texas 2007. p. 293-328.
11. Kremkau FW. Part 1 Sonographic principles in Diagnostic Ultrasound: Principles and Instruments. 7th ed. Philadelphia: Saunders, Elsevier Publications; 2006. p. 3-155.
12. Alexandrov AA. Intracranial cerebrovascular ultrasound examination techniques in Cerebrovascular Ultrasound in Stroke Prevention and Treatment. 2nd ed. USA: Blackwell Publishing; 2011. p. 13-25 and 81-129.
13. Feldmann E, Wilterdink JL, Kosinski A, Lynn M, Chimowitz MI, Sarafin J, et al. The stroke outcomes and neuroimaging of intracranial atherosclerosis (SONIA) trial. *Neurology* 2007;68:2099-106.
14. Santalucia P, Feldman E. The basic transcranial Doppler examination: Technique and anatomy. In *Transcranial Doppler ultrasonography*, 2nd ed. Babikian VL, Wechsler LR, editors. Boston, US: Butterworth Heinemann; 1999. p. 3-12.
15. Yeo LL, Sharma VK. Role of transcranial Doppler ultrasonography in cerebrovascular disease. *Recent Pat CNS Drug Discov* 2010;5:1-13.