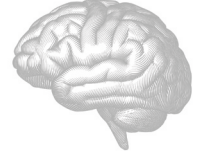


ACIL PEDIATRİK NÖROŞİRURJİDE ANESTEZİ YÖNETİMİ



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NÖROFİZYOLOJİ

Pediyatrik hastalarda normal nörofizyolojik değişikliklere ait kesin veriler sınırlıdır ve genellikle yetişkin hastalardan ve deneysel hayvan çalışmalarından elde edilmişlerdir. Serebrovasküler fizyolojideki yaşa bağlı farklılıklar, beyin cerrahisi hastalarının perioperatif yönetimi üzerinde önemli bir etkiye sahiptir. Bu farklılıkların anlaşılması pediyatrik nöroanestetik bakımın temelidir (1).

Serebral dolaşım, metabolizma, parsiyel arteriyel karbondioksit basıncı (PaCO_2), parsiyel arteriyel oksijen basıncı (PaO_2), kan viskozitesi ve serebral oto-regülasyon gibi bir dizi homeostatik mekanizma ile sıkı bir şekilde düzenlenir.

Beyin tarafından tüketilen oksijen miktarı, oksijenin serebral metabolik hızı (CMRO_2) olarak adlandırılan fizyolojik bir parametreyle gösterilir. Yenidoğanlarda, serebral oksidatif metabolizmanın, beynin erken gelişiminde kritik bir rol oynadığı düşünülmektedir. Yenidoğan ve çocuklarda CMRO_2 ölçümünde günümüzde yakın-kızılötesi spektroskopisi (NIRS) ve manyetik rezonans görüntüleme (MRG) teknikleri kullanılmaktadır. Hem NIRS hem de MRG yöntemlerini kullanan normal sağlıklı yenidoğanlarda yapılan çalışmalar, CMRO_2 'nin yaşla birlikte hızla arttığını ortaya koymuştur (2).

Serebral dolaşım, PaCO_2 'deki değişikliklere son derece duyarlıdır. Erişkinlerde PaCO_2 'nin 1 mm/Hg artması, serebral kan akımını (SKA) yaklaşık 2 mL/100 g/dk değerinde artıracak ve sonucunda serebral kan volümünü artıracaktır (3). Bu doğrusal ilişki, hiperventilasyon yoluyla intrakranial basıncı (İKB) düşürmede çok önemlidir.

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İntraoperatif, SPB'nin 40mm/Hg üzerinde, PaO₂'nin 60 mm/Hg'nin üstünde olması sağlanmalıdır. Hipotansiyondan, İKB'nin ciddi artışından (20 mm/Hg ve üzeri), hastada herniasyon belirtisi veya semptomları yoksa profilaktik hiperventilasyondan (PaCO₂ <35 mm/Hg) kaçınılmalıdır. Başın 15-30° yükseltilmesi İKB'yi azaltır (58, 59).

Epidural veya subdural hematomların boşaltılması için yapılan kraniyotomilerde, büyük kan kaybı ve venöz hava embolisi riski yüksektir (20). Ameliyat döneminde doku perfüzyonunu sağlamak için hastanın kan hacmi kristaloid solüsyonlar ve/veya kan ürünleri ile replase edilmeli, övolemisi sağlanmalıdır. Bununla birlikte, hipertonic salin uygulamasının, hayatta kalma oranını etkilemese de, çeşitli klinik parametreleri iyileştirdiği gösterilmiştir (60).

Pediyatrik TBH'de steroid uygulaması, fonksiyonel sonuçlarda iyileşme, mortalitede azalma veya İKB'de azalma ile ilişkili değildir. Bunun yerine, steroidler endojen kortizol düzeylerinin baskılanmasına neden olabilir ve pnömöni riskini artırabilir, bu nedenle pediyatrik hastalarda önerilmezler (61).

TBH'de bebekler ve çocuklar, yetişkinlere kıyasla daha fazla travma sonrası nöbet riski altındadır (62). Nöbetler, hipertermi ve intrakraniyal hipertansiyona neden olabileceğinden agresif bir şekilde tedavi edilmelidir. Fenitoin uygulanması sadece erken post travmatik nöbet insidansını azaltır. Bu nedenle, yüksek nöbet aktivitesi riski taşıyan hastalarda, şiddetli TBH'yi takiben sadece ilk haftada profilaktik antikonvülzan tedavinin düşünülmesi tavsiye edilir (63).

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