BÖLÜM 34

HİPOKSİK-İSKEMİK ENSEFALOPATİ TANI VE TEDAVİSİ

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Tanım

Neonatal ensefalopati (NE), bilinç bulanıklığı ve konvülsiyonlar gibi santral sinir sistemi fonksiyonlarının bozulması ile ortaya çıkan, hipotonisite ve solunum depresyonunun eşlik edebildiği klinik bir tablodur.[1,2] Neonatal ensefalopatide, enfeksiyonlar, metabolik hastalıklar, konjenital hastalıklar ve travma altta yatan sebepler arasındadır.[3] Hipoksik-iskemik hasar sonucu meydana gelen "Hipoksik-iskemik ensefalopati (HİE)" yenidoğanlardaki en önemli ensefalopati nedenlerinden birisidir.[4]

Epidemiyoloji

Hipoksik-iskemik ensefalopati insidansı 1000 canlı doğumda 1-6 arasında olmakla beraber serebral palsi ve ölü doğumların önemli sebepleri arasında gösterilmektedir.[4] Yeni Zelanda'da Battin ve ark. nın 2016 yılında yayınladığı bir çalışmada NE oranı 1,2/1000 canlı doğum olarak bildirilmiştir.[5] Term yenidoğanlarda neonatal mortalitenin %15-20'sini, 32 gestasyon haftasından önce doğan prematüre bebeklerde ise %50'sini oluşturmaktadır. Ayrıca prematüre bebeklerde görülen serebral palsinin yaklaşık %50'sinden sorumlu tutulmaktadır.[3]

Patofizyoloji

Hipoksik-iskemik ensefalopatinin altta yatan patofizyolojik mekanizmaları hücresel seviyede oksijenlenme yetersizliği (hipoksi) ve yetersiz doku perfüzyonuna (iskemi) bağlıdır. Yetersiz doku kanlanması ve oksijenizasyonu; beynin normal sürecinde yaptığı oksidatif fosforilasyon yerine anaerobik oksidasyona neden olmaktadır. Bu alternatif yol beynin kullandığı enerjinin hızlı tükenmesine, inflamatuvar mediatörlerin salınmasına, uyarıcı nörotransmitterlerin (özellikle glutamat) ortaya çıkmasına neden olmaktadır. Bu mekanizmanın sonucunda da serbest radikallerin oluşması, dokularda kalsiyum birikimi, asidoz ve lipid peroksidasyonu görülmektedir. Böylelikle bu hızlı enerji tüketimi hücre nekrozuna veya programlanmış hücre ölümüne (apopitoz) neden olmaktadır.[4]

Hipoperfüzyon; prematüre yenidoğan beyninde periventriküler alanda beyaz cevher hasarına, term bebeklerde ise subkortikal beyaz cevher ve parasagittal korteks hasarına neden olmaktadır.[6] Gelişmekte olan hasar premiyelinizasyondan sorumlu oligodentrositleri etkileyerek prematüre bebeklerde periventriküler lökomalaziye yol açmaktadır.[6]

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rak verilen monosialogangliozid terapisinin nörogelişimsel bozukluk, serebral palsi ve bilişsel yetersizlik riskini anlamlı olarak azalttığı gösterilmiştir.[85] Yine de uygun doz aralığının belirlenebilmesi ve uzun süreli etkilerinin gösterilmesi için başka çalışmalara ihtiyaç vardır.

Kök hücre tedavisi

Umbilikal kord kaynaklı mezenkimal kök hücre tedavisinin, hipoksik-iskemik beyin hasarında inflamasyon, apopitoz, oksidatif stresten koruyucu etkileri ve rejenerasyonu arttırıcı etkisi bulunmaktadır.[86] Preklinik çalışmalarda nörolojik prognoz üzerinde olumlu etkileri olduğu ve histolojik olarak hücre hasarını azalttığı gösterilmiştir.[87] Bazı klinik çalışmalarla uygulanabilir ve güvenli bir tedavi olduğu da ortaya konmuştur.[88] HİE'de kök hücre tedavisi ümit verici olmakla beraber, bu konuda randomize kontrollü çalışmalara ihtiyaç vardır.

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