

## TRAVMATİK BEYİN HASARI VE KÖK HÜCRE TEDAVİSİ

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## GİRİŞ

Travmatik beyin hasarı (TBH), dünya çapında önde gelen ölüm ve sakatlık nedenlerinden biridir. Travmatik beyin hasarı (TBH), dünya çapında önemli bir mortalite ve morbidite nedeni olarak durmaktadır. Amerika Birleşik Devletleri'ndeki yaralanmaya bağlı ölümlerin %30'undan fazlasını içerir. TBH, iki yaralanma aşaması içerir; yani, beyin dokusunda mekanik hasara neden olan bir dış güç yoluyla bir ilk kafa travması ve daha fazla beyin dejenerasyonuna yol açan iltihaplanma, apoptoz, oksidatif stres ve diğer patofizyolojik komplikasyonları içeren ikincil bir biyokimyasal kaskadlar. TBH için tedavi seçenekleri sınırlı olmaya devam ediyor ve bu da yaralı beyni korumak veya yenilemek için tasarlanmış yeni terapötik modalitelerin acilen incelenmesi gerektiğini gösteriyor.<sup>1</sup>

## EPİDEMİYOLOJİ

Kafa travmaları toplumda sık görülen önemli sağlık bunun yanında ciddi sosyo-ekonomik problemlere neden olan bir konudur. Travma, 1-45 yaş arası bireylerde önde gelen ölüm nedenidir ve bunların çoğundan travmatik beyin hasarı (TBH)

sorumludur; Amerika Birleşik Devletleri'nde yılda 50.000'den fazla ölüm. TBH, Glasgow Koma Ölçeği Skoruna (GKS) göre klinik olarak hafif, orta ve şiddetli olarak sınıflandırılabilir; kalıcı sakatlık oranları sırasıyla %10, %60 ve %100 ve genel ölüm oranları %20-30'dur. En güncel CDC verilerine göre ekonomik etki yalnızca ABD'de 80 milyar doların üzerindedir.<sup>2,3,5</sup> Ülkemizde ise kafa travmalarına sekonder mortalite 7 oranı ise 100000 de 10 dur. Amerika Birleşik Devletleri'nde yapılan bir araştırmada genç yaş popülasyonundaki ölümlerde travma nedenler arasında birinci sırada gösterilmiştir. Tüm yaş grupları arasında yapılan sıralamada ise; kardiyovasküler hastalıklar ve kanserden sonra ölüm nedenleri arasında üçüncü sırada yer almaktadır.<sup>6</sup> Kafa travmalarının epidemiyolojisi sosyo-ekonomik seviye farklılıklarına, yaş, ırk ve cinsiyete göre değişim göstermektedir. Yapılan araştırmalarda kafa travmalarında 15-25 yaş grubunun risk yüzdesinin fazla olduğu görülürken, kafa travması insidansı 25-60 yaş grubunda düşme eğilimine girmekte, 60 yaşından sonra ise tekrar yükselmektedir. Kadın/erkek oranı ise 1/2-1/2,8 oranında değişmektedir. Sosyo-ekonomik seviyesi düşük toplumlarda kafa travması görülme oranı daha sıktır<sup>7</sup>. Kafa travmasına bağlı ölümlerin %50'si hastaneye ulaşmadan

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yönelik yeni çalışmalara ışık tutmaktadır. TBH hastalarında nörolojik ve motor fonksiyonları iyileştirme becerisini çalışmalarda net olarak ortaya koyulmamıştır. Bununla birlikte, aracılık eden mekanizmalar bilinmemektedir ve üstlenilen çalışma sayısı azdır. Çözülmemiş sorunlar devam etsede, son yıllarda yetişkin kök hücreleri içeren yeni hücre terapisi tekniklerinin, yetişkin sinir sisteminin rejenerasyon olasılığı ile ilgili yeni kavramlarla bağlantılı olarak, TBH' nin tedavisi için ileriye dönük yeni çalışmalar açısından fırsatlar sağlamıştır. Olası sonuçların yeterince anlaşılması, bilinmeyen etik sorunlar, uygulama yolları ve karma tedavi kullanımı nedeniyle kök hücrelerin travmatik beyin hasarında terapötik uygulaması konusunda daha fazla çalışma yapılması gerekmektedir.

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