

## KÖK HÜCRE TEDAVİSİNDE: GEÇMİŞ, BUGÜN VE GELECEK

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## GİRİŞ

Kök hücreler, kendini yenileme ve çeşitli vücut hücrelerine farklılaşma yeteneği ile benzersiz özelliklere sahip vücut hücreleri olarak kabul edilmektedir. 21. yüzyılda kök hücre konusu, tıbbi araştırma ve tedavi alanlarında büyük önem kazanmıştır. Kök hücre tedavisi, insan vücudundaki hasarlı hücreleri ve dokuları yenilemek veya bu hücreleri eksojen hücreler vererek yeni, sağlıklı ve tamamen işlevsel hücrelerle değiştirmek için kendi kendini yenileme ve farklılaşma dâhil olmak üzere kök hücrelerin benzersiz özelliklerini kullanan yeni bir terapötik yaklaşımdır. Kök hücre teknolojisindeki son gelişmeler, henüz tedavi edilmemiş hastalık ve rahatsızlıklardan muzdarip hastalar için yeni bir kapı açmaktadır. İnsan pluripotent kök hücreleri (iPKH'ler) ve multipotent mezenkimal kök hücreler (MKH'ler) dahil olmak üzere kök hücre bazlı terapi, son zamanlarda rejeneratif tıpta önemli bir oyuncu olarak ortaya çıkmıştır.<sup>1-5</sup>

Kök hücre, temel olarak belirli bir mikro ortam altında hedef hücrelerde doğrudan farklılaşma yoluyla terapötik etkisini gösterir ve hasarlı veya eksik hücrelerin rejenerasyon sürecinde rol

alır. Bu arada, eksojen kök hücreler hasarlı bölgeye göç edebilir ve endojen kök hücreleri *in situ* aktive ederek hedef hücrelere farklılaştırabilir ve parakrin sekresyon ile ortama etki edebilir.<sup>2</sup>

## KÖK HÜCRE UYGULAMALARININ TARİHİ

'Kök hücre' terimi ilk kez 1868 yılında ünlü Alman biyolog *Ernst Haeckel* tarafından döllenmiş yumurtanın organizmanın tüm hücrelerini meydana getirme özelliklerini tanımlamak için kullanılmıştır.<sup>6</sup> Kök hücre tedavisinin tarihsel süreci, 1888'de, kök hücre kavramını iki Alman zoolog *Theodor Heinrich Boveri* ve *Valentin Haecker* tarafından 'daha özelleşmiş hücrelere farklılaşabilen embriyodaki farklı hücre popülasyonu' şeklinde tanımlanması ile başlamıştır.<sup>7-8</sup> 1902'de kemik iliği araştırmaları üzerinde çalışan histolog *Franz Ernst Christian Neumann* ve *Alexander Alexandrowitsch Maximov* tarafından yürütülen araştırmalar, hematopoez olarak da bilinen bir süreç olan olgun kan hücrelerine yol açan ortak progenitor hücrelerin varlığını göstermiştir.<sup>3,9,10</sup>

1939'da, aplastik anemi teşhisi konan bir hastada, insan kemik iliği naklinin ilk vaka raporu

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ral yolların restorasyonunu artırmak için umut verici teknikleri temsil eder.<sup>1,35,60,64,65</sup>

Yakın gelecekte, saf kök hücreler veya genetik olarak tasarlanmış mezenkimal kök hücreler kullanılarak, en azından hastalık nedeniyle bozulan nöral yapıyı eski haline getirmek için daha etkili hücresel terapiler elde edilene kadar, daha fazla çalışma ve klinik denemenin gerçekleştirileceğini umut ediyoruz.<sup>66</sup>

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