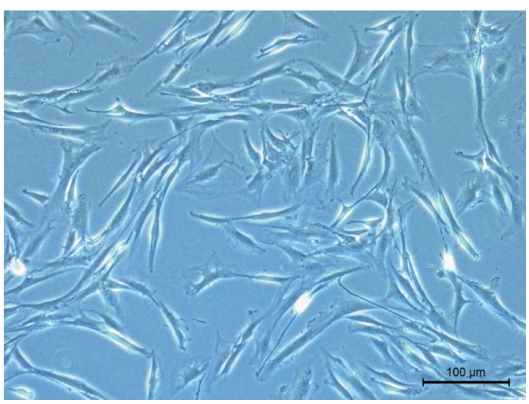
BÖLÜM 13

MEZENKİMAL KÖK HÜCRELER VE KLİNİK KULLANIMI

Zeynep Burçin GÖNEN [1]
Nur Seda GÖKDEMİR [2]

MEZENKİMAL KÖK HÜCRELER

Mezenkimal kök hücreler (MKH'ler); kendini yenileme potansiyeli olan, özelleşmiş hücrelere farklılaşabilme yetisine sahip, erişkin ve fötal dokulardan izole edilebilen fibroblastoid klonal hücrelerdir **(Resim 1).** [1] Vücutta farklı doku kaynaklarından izole edilebilir.[2,3] MKH elde edilebilecek dokular başlıca; kemik iliği, diş pulpası, adipoz doku, sinoviyum ve umbilikal kord, amniyotik membran gibi fötal dokulardır. [1] MKH'ler, multipotent kök hücrelerdir. Böylece birden fazla özel hücre tipine dönüşme kapasitesi ile klinik kullanımda önemli bir yere sahiptir.



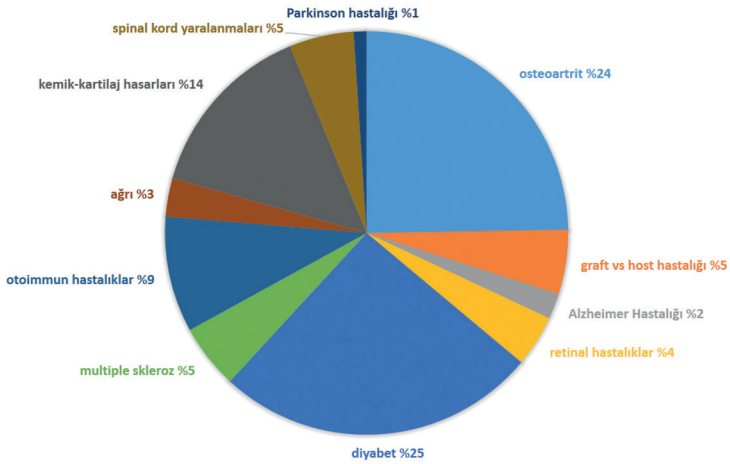
Resim 1. MKH'lerin iğ şeklinde fibroblastoid hücre görüntüsü, 10x, ışık mikroskopi

Günümüzde klinik kullanım amacı ile en az girişimsel şekilde elde edilebilen, düşük düzeyde insan lökosit antijen eksprese eden ve yüksek proliferasyon yeteneklerine sahip umbilikal kord gibi prenatal kaynaklar ön plana çıkmaktadır.[2,4] MKH'ler rejeneratif tedaviler için hem otolog hem de düşük immunojenik özelliklerinden dolayı allojenik kullanıma uygun hücre tedavisi ürünleridir. MKH'ler hasarlı dokuları onarmak için anti-inflamatuar ve anjiyojenik sitokinlerin salınmasını sağlar. Aynı zamanda beyinden türetilen nörotrofik faktör (BDNF) gibi hücre fonksiyonlarını etkileyen nörotrofik faktörleri salgılar. Nöroproteksiyon, immünomodülatör ve farklılaşma yetenekleri ile nörodejeneratif hastalıkların tedavisinde de umut verici bir potansiyele sahiptir.[5]

MKH'ler bir hasar varlığında kemokinlerin etkisi ile hasarlı dokuya göç edip anti-inflamatuvar, anti-proliferatif ve anti-apoptotik bir mikroçevrenin oluşumuna katkı sağlar.[1] Hasarlı dokunun mikroçevresinde bulunan farklı hücre gruplarında efektör etkiye sahiptir[4] Yapılan *in vivo* klinik öncesi çalışmalar, MKH'lerin intravenöz uygulanması sonrası büyük bir kısmının akciğer mikro damar sisteminde tutulduğunu, az

[1] Doç. Dr., Erciyes Üniversitesi, Diş Hekimliği Fakültesi, Klinik Bilimler Bölümü, Ağız, Diş ve Çene Cerrahisi AD., zburcin@gmail.com, ORCID iD: 0000-0003-2725-9330

[2] Uzm. Dr., Erciyes Üniversitesi Genom ve Kök Hücre Merkezi, nursedagokdemir@gmail.com, ORCID iD: 0000-0003-0294-7559



Şekil 1. Dünya'da gerçekleştirilen klinik araştırmaların dağılımı (clinicaltrials.gov'a göre)

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