18. BÖLÜM

REJENERATİF TIPTA SON DÖNEM KÖK HÜCRE UYGULAMALARI

Figen ABATAY SEL[1]

GİRİŞ

Köken olarak rejenerasyon kelimesinden orijinlenen rejeneratif tıp, yenileyici tıp anlamına gelmekte olup doku fonksiyonlarının yeniden kazanılması amacıyla başvurulan yeni gelişen bir modern tıp alanıdır. Kısaca hastalık, yaşlanma, neonatal bozukluklar başta olmak üzere birçok alanda doku fonksiyon kayıplarını azaltmak, doku ve organların işlevselliğini fonksiyonel olarak yeniden kazandırmak amacıyla başvurulmaktadır. Bu amaçla başvurulan tedavide ya ilaç verilerek dokulardaki kök hücrelerin aktivasyonu sağlanır ya da kök hücrelerden elde edilen özelleşmiş hücreler ile doku hasarı replasmanı sağlanmaya çalışılır. Hasar oluşmuş dokunun yerine transplante edilen allojeneik ya da otolog hücrelerle, çeşitli biyomalzemelerin transfeksiyonuyla dokunun disfonksiyonu giderilme amaçlanmaktadır. Günümüzde bu tedavi seçenekleri hücresel tedavi yöntemleri, kök hücre biyolojisi, gelişimsel biyoloji ve tıp bilimlerinden elde edilen metodolojilerin kullanılması ile gerçekleştirilmekte olup multidisipliner çalışmaların artması ile yakın gelecekte bu uygulamalara doku mühendisliğinin de önemli katkılar yapacağı beklenilmektedir (1).

Rejeneratif tıpta tedavi amacıyla sıklıkla kök hücreler kullanılmaktadır. Kök hücreler, sınırsız asimetrik bölünme ile kendini yedekleyerek yenileyebilen, birçok hücre ve dokuya farklılaşabilme kapasitesine sahip özel hücrelerdir. Kolay transplante edilebilme ve farklı hücre tiplerine dönüşebilme özelliklerinden dolayı kök hücreler, rejeneratif tıp alanının ilgi odağı haline gelmişlerdir. Kök hücreler kemik iliği, kordon kanı, Wharton jeli, adipoz, diş, deri gibi

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birçok kök hücre kaynağı, bu hastalıkların tedavileri için deneysel ya da klinik çalışmalarda kullanılmaktadır. Özellikle gen terapisi ile kombinlenmiş kök hücre çalışmaları olan indüklenebilir pluripotent kök hücre çalışmaları yakın gelecekte klinik alanda olduğu kadar hastalık modelleri oluşturup hastalıkların sebeplerini ve mekanizmalarının çözülmesine de ışık tutacağı bildirilmektedir. Öte yandan kök hücrelerin sahip olduğu plastisite yeteneğinin istenmeyen durumları oluşturma kapasitesi, farklı ve tartışmalı sonuçlara sebebiyet veren klinik araştırmalar, rejeneratif tıp alanında kök hücre potansiyelinin daha yüksek populasyonda hasta ve kontrol gruplu ileri çalışmalar ile anlaşılabileceğini göstermektedir. Özelikle kök hücrelerin rejeneratif etkisinin yakın gelecekte doku mühendisliğinin bu alana olacak katkıları ile aydınlanacağı öngörülmektedir.

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