

Bölüm 10

TROMBOSİT KONSANTRELERİNİN ORAL VE MAKSİLLOFASİYAL CERRAHİDE KULLANIMI

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İnflamasyonu düzenleyen ve iyileşmeyi arttıran biyoaktif cerrahi materyallerin geliştirilmesi klinik araştırmalarda karşılaşılan en büyük zorluklar arasındadır. Sert ve yumuşak doku iyileşmesi çok sayıda sinyal proteini tarafından yönlendirilir. Bu süreç hala tam olarak anlaşılammıştır. Bununla birlikte trombositlerin sadece hemostazda değil, aynı zamanda yara iyileşmesinde de kritik bir rol oynadığı bilinmektedir. (Prakash & Thakur, 2011)

Trombositler kemik iliğindeki megakaryositlerden köken alırlar. Boyutları yaklaşık 2–3µm'dir. Trombositlerin ana işlevinin aşırı kanamanın önlenmesi ve yaralanma sonrasında kan damarlarının duvarlarını onarmak olduğu bilinmektedir. Trombositler, vasküler endotel hasarı sonrasında açığa çıkan kolajen ile temas etmeleri sonucunda aktive olur ve pıhtılaşmanın ilk fazından sorumludur. Bu faz trombositlerin adezyon, aktivasyon ve agregasyon fazlarını içermektedir. (Amable& ark., 2013) Aktive olmuş trombositler şekil değiştirir ve ekstraselüler alanda granül salınımını gerçekleştirir. Trombositler sadece hemostazda değil, aynı zamanda anjiyogenez, inflamasyon, antibakteriyel koruma ve doku rejenerasyonunda da görev alır. Ana görevlerinin kan pıhtısı oluşumu olmasına rağmen, büyüme faktörleri, enzimler ve diğer proteinleri içerir. Trombositlerde büyüme faktörlerinin ana deposu olan alfa granülleri mevcuttur. (Harrison & Cramer, 1993; Broos & ark., 2012) Büyüme faktörleri, kemotaktik ve mitojenik özelliklere sahip olup, hücre fonksiyonlarını ve proliferasyonu düzenler ve hasar sonrasında yumuşak ve sert doku rejenerasyonunu stimüle eder. Büyüme faktörleri hedef hücrelerdeki spesifik reseptörlere bağlanarak protein sentezi, kolajen ve osteoid benzeri doku akümülyasyonunu başlatır. Önemli büyüme faktörlerinden bazıları PDGF (Trombosit Türevli Büyüme Faktörü), TGF-β (Transforme Edici Büyüme Faktörü Beta), VEGF (Vasküler Endotelyal Büyüme Faktörü), EGF (Epidermal Büyüme Faktörü) ve IGF-1 (İnsülin Benzeri Büyüme Faktörü-1)'dir. Trombosit konsantrasyonları doku rejenerasyonu için gerekli koşulları büyüme faktörlerinin lokal seviyesini ve terapötik özelliklerini arttırarak iyileştirir. (Mihaylova& ark., 2017)

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iki biyomateryal için benzer sonuçlar bildirilmiştir.(Das & ark., 2016) Bir diğer çalışmada ise PRF ve kontrol grupları arasında istatistiksel olarak anlamlı bir fark bulunmamıştır. Bununla birlikte yazarlar PRF grubunda daha hızlı kemik iyileşmesi olduğunu belirtmişlerdir. (Suttapreyasri & Leepong, 2013)

PRF'in kullanımının araştırıldığı bir diğer konu PRF'nin dental implant cerrahilerinde osseointegrasyonu hızlandırma potansiyelidir. Yapılan 2 çalışmada PRF kullanımının ilk iyileşme periyodunda implant stabilitesini arttırdığı bildirilmiştir.(Öncü & Alaaddinoğlu, 2015; Öncü & Erbeyoğlu, 2017) Peri-implant marjinal kemik rezorpsiyonunun değerlendirildiği çalışmalarda çekim sonrası immediat implant yerleştirilmesini takiben peri-implant kemik rezorpsiyonunun azaldığı bildirilmiştir. (Boora, Rathee & Bhorja, 2015; Öncü & Erbeyoğlu, 2017) Bununla birlikte bir sistematik derlemede osseointegrasyonun erken fazına ilişkin faydaları konusunda orta düzeyde kanıt içerdiği vurgulanmıştır. (Strauss, Stähli & Gruber, 2018)

Bifosfonata bağlı çene osteonekrozunun önlenmesi ve tedavisinde PRF'nin kullanımına ilişkin pozitif sonuçlar bildirilmiştir. Osteoporöz için oral bifosfonat kullanan 102 hasta üzerinde yapılan bir çalışmada çekim kavitesine PRF yerleştirilen hastalarda erken epitelizeasyon gözlenmiştir. Bu çalışmada PRF'nin oral bifosfonat kullanan hastalarda çekim sonrasında gecikmiş iyileşme riskini azaltabileceği belirtilmiştir.(Asaka& ark., 2017)Bir diğer çalışmada da PRF membranların evre 2 nekrozlarda faydalı olabileceği bildirilmiştir. (Nørholt&Hartlev, 2016)

Ghanaati ve ark.'nın yaptığı derlemede diş hekimliği ile oral ve maksillo-fasiyal cerrahide yumuşak ve sert doku iyileşmesi için PRF kullanımıyla ilgili basılan makalelerin bilimsel kanıt seviyesi değerlendirilmiştir. Değerlendirilen 392 makale içerisinde 38 makalenin yüksek kanıt seviyesine sahip olduğu rapor edilmiştir. Bu makalelerde PRF'nin sert ve yumuşak doku rejenerasyonunu belirgin olarak arttırdığı belirtilmiştir. Bununla birlikte tekrarlanabilir çalışmalarda PRF'nin yararlarının araştırılabilmesi için PRF protokollerinde standardizasyona ihtiyaç duyulmaktadır. (Ghanaati& ark., 2018)

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