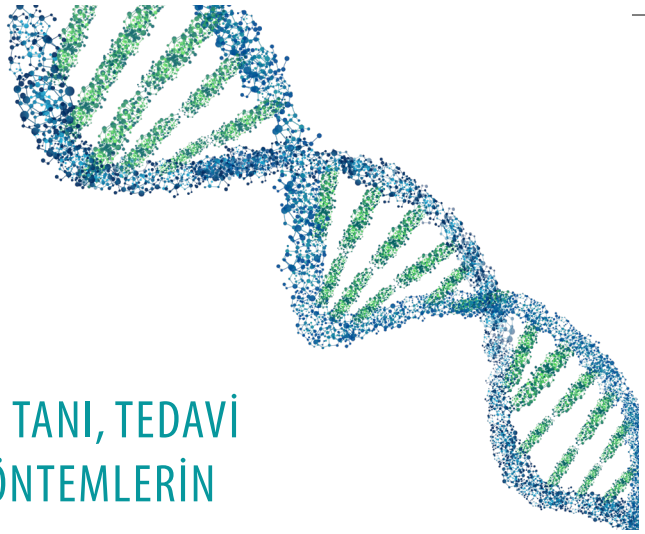

BÖLÜM 32

İNSAN İMMÜN YETMEZLİK VİRÜSÜ (HIV) TANI, TEDAVİ VE EPİDEMİYOLOJİSİNDE MOLEKÜLER YÖNTEMLERİN KULLANIMI

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Giriş

İnsan İmmün Yetmezlik Virüsü [Human Immunodeficiency Virus (HIV)] yakın geçmişte tanımlanmasına rağmen; yüksek mortalite ile seyreden epidemiler oluşturması, cinsiyet, ırk, ülke farkı gözetmeksizin erişkinlerin dışında bebek ve çocukları da infekte etme özellikleri ile güncelliklerini koruyarak birçok araştırmanın konusu olmuşlardır. Çinli bir bilim insanı olan He Jiankui Kasım 2018'de HIV'in hücreye tutunmasını sağlayan kemokin reseptör geninin (*CCR5*) CRISPR/Cas9 tekniği ile yeniden düzenlenip HIV'e karşı doğal bağışık olarak ikiz kız bebeklerin dünyaya getirildiği bilgisini paylaşmıştır [1]. Her ne kadar eleştirileri ve etik tartışmalarını beraberinde getirse de Lulu ve Nana bebekler HIV'e karşı modifiye edilmiş DNA ile dünyaya gelen ilk insan vakası olmuştur.

İnsan immün yetmezlik virüsü, CD4+ T lenfositleri başta olmak üzere bağışıklık sistemi hücrelerine etki ederek immün sistemin zayıflamasına neden olan ve asemptomatik taşıyıcılıktan ölüme kadar geniş bir klinik tablo ile seyredebilen infeksiyon hastalığı etkenidir. Edinilmiş Bağışıklık Yetmezliği Sendromu [Acquried Immune Deficiency Syndrome (AIDS)] ise; HIV tarafından yüksek düzeyde tahrip edilmiş yetersiz bağışıklık sistemi sonucu ortaya çıkan pulmoner tüberküloz, viral, bakteriyel ve parazitik fırsatçı enfeksiyonlar ile karakterize olan hastalık evresidir.

Virion Yapısı ve Genom Organizasyonu

İnsan immün yetmezlik virüsleri, *Retroviridae* ailesinin Lentivirus alt ailesi içerisinde sınıflandırılan, yaklaşık 100-120 nm çapında membranlı RNA virüsleridir. Bu virüslerin HIV-1 ve HIV-2 olmak üzere iki tipi bulunmaktadır. HIV-1 virüsü Orta Afrika şempazelerinden, HIV-2 virüsü ise Batı Afrika'daki bir maymun türünden köken almaktadır [2]. HIV-1 tüm dünyada yaygın olan ve daha patojenik virüs tipidir. HIV-1, *env* ve *gag* genlerinin farklılığına göre

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litatif moleküler teknikler, özellikle 18 aydan küçük bebeklerde akut HIV-1 infeksiyonunun saptanmasında kullanılmaktadır. Hızlı tanı testleri, tanı ve tedaviye kolay ve hızlı erişim sağlaması açısından son dönem çalışmalarının odağı konumundadır. Fenotipik ve genotipik testler aracılığıyla saptanan ilaç direnci ve duyarlılık, ART uygulanan hastaların izlenmesinde bir rutin olmuştur. Benzer şekilde, moleküler tekniklerin kullanıldığı konak gen polimorfizmi ve viral immün yanıtlar da HIV infeksiyonunun izlenmesine aracılık etmektedir. HIV infeksiyonunu tümden tedavi eden (viral kür) antiviral ilaçların ortaya çıkarılması yakın bir gelecekte olasıdır. Bu süreçte ise, sürekli ilerleyen teknolojinin etkisiyle daha duyarlı, daha özgün, daha pratik ve daha ucuz diyagnostik yöntemlerin ortaya çıkarılması da beklenmektedir.

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