



Dilara NEMUTLU SAMUR<sup>1</sup>

### Giriş

Parkinson hastalığı (PH); dopaminerjik sistemde meydana gelen nörodejenerasyon sonucu istirahat tremoru, rijidite ve bradikinezi gibi klasik üçlü motor belirti ile karakterize bir hareket hastalığı olarak tanımlanmaktadır (1). Ancak, günümüzde serotonerjik, kolinerjik ve noradrenerjik sistemler gibi diğer nörotransmitter sistemlerin de bu nörodejeneratif süreçten etkilendiği ve motor olmayan belirtilerin de hastalık tablosuna eşlik ettiği bilinmektedir (2). PH'nin prevalansının genellikle 100.000 kişide 100 ile 200 arasında değiştiği kabul edilmektedir ve yıllık insidansın 15/100.000 olduğu düşünülmektedir (3). Durmuş ve ark. tarafından yapılan Türkiye'de PH prevalansını belirlemeye yönelik ilk büyük popülasyon tabanlı çalışmada, PH prevalansı 202/100.000 bulunmuştur (4). PH'nin karakteristik özellikleri, SNpc'de nöromelanin pigmenti içeren nöronlarda meydana gelen nöron kaybı ve yaygın hücre içi protein ( $\alpha$ -sinüklein) birikimi ile meydana gelen yuvarlak, hiyalin nöronal sitoplazmik inklüzyonların (Lewy cisimcikleri) varlığıdır (2). Değişen başlangıç yaşı, semptomlar ve ilerleme hızına sahip heterojen bir hastalık olan PH'de, hastalığın farklı yönlerini incelemek için çeşitli hayvan modellerinin kullanılması gerekir (5). PH'yi deney hayvanlarında modellemek için üç ana yaklaşım kullanılır: (i) nörotoksinler, (ii) genetik manipülasyonlar ve (iii) transkripsiyon faktörlerini hedef alan stratejiler (5). Bu kitap bölümünde PH'nin motor ve motor olmayan semptomlarını taklit etmede başarılı modeller olarak kullanılan nörotoksin modelleri ele alınmıştır.

<sup>1</sup> Dr. Öğr. Üyesi, Alanya Alaaddin Keykubat Üniversitesi Tıp Fakültesi, Tıbbi Farmakoloji AD., dilaranemutlu@gmail.com

## Sonuç ve Öneriler

Nörotoksin modelleri hem uygulamaları hem de önceki çalışmalarla karşılaştırmaları kolay olduğu için oldukça değerlidir. 6-OHDA ve MPTP, deney hayvanlarında dopaminerjik nigrostriatal yolakta seçici ve etkili dejenerasyonunu indüklemek için en sık kullanılan modellerdir. Bunun yanı sıra rotenon gibi pestisit modelleri de hem nigral hem de ekstranigral patolojiyi kolaylıkla taklit edebildiği için değerlidir. Bir başka pestisit ve herbisit modeli olan parakuat/maneb etki mekanizması tam olarak aydınlatılmamış ve daha az sıklıkta kullanılan modellerdendir. Nörotoksin modellerinin her gibi çeşitli avantajlara sahip olmakla birlikte bu nörotoksin modellerinin hiçbiri PH'nin tüm patolojik özelliklerini taklit edemez. Bu nedenle test edilmek istenen hipoteze uygun avantajları olan nörotoksin PH modeli oluşturmak için seçilmelidir. Nörotoksin modelleri ile yapılan çalışmalar nöroprotektif tedavilerin geliştirilmesine veya PH patogenezinin aydınlatılmasına katkıda bulunabilir.

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