



BÖLÜM 6

Kronik Psikiyatrik Hastalıklarda Nöron Plastisitesi

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GİRİŞ

İnsanda nöron migrasyonu gebeliğin ilk haftalarında başlar, 25-26. haftalara kadar nöron oluşumu çok hızlıdır ve doğum esnasında büyük ölçüde tamamlanmış olur. Doğumu izleyen erken dönemde de sinaps oluşumu devam eder. Geçmişte, yeni nöron üretiminin sadece intrauterin çağda olduğu ve sonrasında beynin adaptif ve hasar tamiri süreçlerinin bu sınırlı sayıdaki nöronal ağ ile sağlandığı düşünülmekte iken, nörogenez, gliogenez, sinaptogenez, aksonal büyüme ve geri çekilme gibi süreçlerin erişkin çağda da etkin olduğunu ve nöronal plastisitede önemli rol oynadığını biliyoruz. Nöron plastisitesi, sinapslarda güçlenme, zayıflama, sinaps sonrası sinyal iletim düzeneklerinde farklılık, sinapsların sayı ve dağılımında artma veya azalma gibi her türlü değişikliği ifade etmektedir. Nöronal devrelerin işlevlerini devam ettirmeleri, bilişsel fonksiyonların sağlıklı biçimde çalışması ve nöropatolojiye yol açma ihtimali olan çeşitli içsel veya çevresel zorlanmalara karşı uygun adaptasyon mekanizmaları geliştirebilmesi beynin bu plastisite gücüne bağlıdır. Bu sayede kişiler yeni yaşam koşullarına adapte ola-

bilmekte, bazı işlevlerini bu uyum sürecinde yitirirken, yeni işlevler geliştirebilmekte, karmaşık motor becerileri öğrenip, uzun süreli bellek oluşumunu sağlayabilmektedir (1).

Intrauterin dönemden sonra organizmanın diğer hücreleri gibi nöronların da kendilerini yenileme ve onarma özelliğine sahip olduğunun gözlenmesi ile ortaya çıkan nöronal plastisite kavramı, nöropsikiyatrik hastalıkların patogenezinin daha iyi anlaşılması ve tedavi seçeneklerinin geliştirilmesi için de kritik öneme sahip olmuştur.

Merkezi sinir dizgesinin gelişimi belli bir sırayla belli aşamaların tamamlandığı bir süreçtir. Ontogenetik süreçlerin hatalı regülasyonu, örneğin stres gibi çevresel zorlanmalara duyarlı hale getirebilir, özgül bir gelişim aşaması engellenip gecikebilir. Bu da bazı beyin yapılarının veya devrelerinin adapte olma becerilerini gittikçe kaybederek daha savunmasız hale gelmelerine, beynin hemeostazının bozulmasına, ve nihayetinde nöropsikiyatrik bir hastalığın gelişmesine yol açabilir. Bu bozukluklar doğumdan sonra birkaç yıl içinde başlayabileceği gibi çocukluk ve ergenlikten erişkinliğe geçiş döneminde de ortaya çıkabilir (2,3).

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sadece beynin belli bölgeleri veya belli nörotansmitter etkinlikleri ile açıklanamayacağını ve aslında bu sorunun cevabının çok karmaşık olabileceğini gösterdi. Beynin bu karmaşık yapısı yeni bulguları, yeni bulgular da yeni soruları ortaya çıkarmakta ve bizleri de daha kapsamlı ve çok boyutlu araştırmaya yönlendirmektedir.

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