



## BÖLÜM 9

# Kronik Psikiyatrik Hastalıklarda Beyin Görüntüleme Çalışmaları

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### GİRİŞ

Modern görüntüleme tekniklerinin gelişimi ile birlikte, 1970'li yıllarda farklılaşmış beyin yapılarını ortaya koyan ilk bulguların yayınlanmasından sonra nörogörüntüleme, biyolojik psikiyatride en popüler araştırma yöntemleri arasında yerini almıştır (1). Psikiyatrik bozukluklarda nörogörüntüleme yöntemlerinin kullanımı daha çok araştırma alanlarında olup, hastalıkların altında yatan morfolojik, metabolik, hatta moleküler farklılıkların tespit edilebilmesini ve yeni tedavi yöntemlerinin geliştirilmesini mümkün kılmıştır.

En çok kullanılan yapısal beyin görüntüleme yöntemleri bilgisayarlı tomografi (BT), manyetik rezonans görüntüleme (MRG), manyetik rezonans spektroskopisi (MRS), difüzyon tensör görüntüleme iken, pozitron emisyon tomografisi (PET) ve tek foton emisyon bilgisayarlı tomografi (Single-photon emission computed tomography, SPECT) ve fonksiyonel manyetik rezonans (fMRI), işlevsel beyin görüntüleme yöntemleri olarak kullanılmaktadır. Günümüzde acil servisler başta olmak üzere pek çok klinikte yararlanılan bilgisayarlı tomografi (BT), başın tamamının çevresinden X-ray görüntülerini almaktadır. Kemik dokusu oldukça yüksek düzeyde ışını absorbe edip,

kendisi ve etrafındaki dokular ile ilgili bilgi verirken, beyin dokusunda gri madde ve beyaz madde arasındaki ayrımı yapmak BT ile oldukça güçtür. Psikiyatride görüntülemenin gerekli olduğu çoğu durumda ve araştırmalarda manyetik rezonans görüntüleme (MRG), tercih edilen yapısal görüntüleme yöntemidir. MRG, dokularda en yaygın olarak bulunan ve yoğun sinyal üreten hidrojen atomlarının, güçlü bir manyetik alan içerisinde, kendilerini rezonansa uğratacak bir radyofrekans dalgası ile uyarılıp titreştirilmesinden elde edilen sinyallerin görüntüye dönüştürüldüğü, çözünürlüğün yüksek olduğu yapısal görüntüleme yöntemidir. MRG başlıca su ve yağ moleküllerinin içindeki hidrojen protonlarından kaynaklanan sinyali ölçerek görüntü oluşturur. Manyetik rezonans spektrografisinde (MRS)'de ise büyük çoğunluğu oluşturan su ve yağ sinyalleri baskılanarak, diğer moleküllerde bulunan protonların sinyali ölçülür. Bu özellik birçok metabolik sürecin ve ilaç dağılımlarının incelenmesini sağlamaktadır. MRG'den farklı olarak MRS'de hidrojen dışı çekirdekler de kullanılır (2).

İşlevsel görüntüleme yöntemlerinden olan fonksiyonel MRG (fMRI) nöronal aktiviteye duyarlıdır. Kan akımındaki değişimlerle beyin bölgeleri arasındaki fonksiyonel bağlantı gibi spon-

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Ancak, şimdiye kadar yapılan çalışmalar iki yönlü bir ilişkiye işaret etmektedir. Hipokampal hacmin azalması gibi gözlemlenen bazı anormalliklerin bir yandan TSSB gelişimi için yatkınlaştırıcı bir faktör, diğer yandan da bozukluğun bir sonucu olabileceği ve zamanla daha da hacim azalması olduğu öne sürülmektedir (70).

## SONUÇ

Son zamanlarda yayınlanan ruh sağlığı konusundaki araştırmalar, hastalıkların altında yatan olası mekanizmaları inceleyerek, risk altındaki kişileri tespit etmek ve prognostik faktörleri belirlemek yoluyla hastalıkların klinik olarak ortaya çıkışını ve kötüleşmesini önlemeye yönelik müdahaleleri vurgulamaktadır. Nörogörüntüleme bulguları, psikiyatrik hastalıklar ile ilişkili yapısal ve işlevsel değişikliklere ilişkin paha biçilemez bilgiler sağlamıştır. Bilimsel başarılarına rağmen, nörogörüntüleme teknikleri şimdiye kadar psikiyatri için somut tanı araçları sağlamamıştır. Bununla birlikte gelişen nörogörüntüleme teknikleri ve bu yönde yapılan araştırmalar izlem sağlayarak mevcut yaklaşımların iyileştirilmesine, belirli tedavi stratejilerinin başarısını tahmin etmeye yardımcı olabilir; dolayısıyla daha etkili tedavi seçeneklerinin geliştirilmesine katkıda bulunabilir.

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