

## **Bölüm 6**

# **SEÇİCİ SEROTONİN GERİ ALIM İNHİBİTÖRLERİNİN TERAPÖTİK İLAÇ DÜZEYİ İZLEMİNDE LC-MS/MS YÖNTEMLERİ**

**Aykut KUL<sup>1</sup>**

### **1. GİRİŞ**

Depresyon toplumun her kesimini etkileyen ve oldukça yaygın olarak görülen bir psikiyatrik bozukluktur. Bu bozukluğun tedavisi için egzersiz, bilişsel davranışçı terapi, yoga, bitkisel ürünler gibi non-farmakolojik ve antidepresanlar gibi farmakolojik tedavi seçenekleri bulunmaktadır. Seçici serotonin geri alım inhibitörleri (SSGİ) tedavide birinci basamak antidepresanlar olarak kabul edilir ve fluoksetin, sitalopram, essitalopram, fluvoksamin, paroksetin, sertralin, viladazon ve vortiksetin bu grubun etken maddeleridir.

Terapötik ilaç düzeyi izlemi (TİDİ) izlemi ilaç konsantrasyonlarının çeşitli biyolojik sıvılarda belirli bir terapötik aralıkta kalmasını hedefler. Toksikite şüphesi, yanıt eksikliği, ilaç rejimine uygunluğun değerlendirilmesi ve ilaç etkileşimi gibi durumlarda TİDİ'ye başvurulur. Yapılan çeşitli çalışmalar antidepresan konsantrasyonlarının bireyler arasında oldukça değiştiğini gösterdiği için bu ilaç grubunda TİDİ önem arz etmektedir.

TİDİ uygun biyoanalitik metotların mevcudiyetini gerektirir. Sıvı Kromatografisi Ardışık Kütle Spektrometresi (LC-MS/MS) oldukça hassas ve spesifik bir yöntem olduğu için bu çalışmalarda altın standart olarak kabul edilmektedir. Bu sebeple bu çalışma kapsamında SSGİ grubuna ait olan 8 farklı etken maddenin genel farmakokinetik özellikleri derlenmiş ve biyolojik matrislerden tayini için literatürde bulunan çeşitli LC-MS/MS metotları incelenerek tablo halinde sunulmuştur.

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Plazma örneklerinin LC-MS/MS ile analizi yapılırken matriks etkileri dikkate alınmalıdır. Örnek hazırlamada protein çöktürme kolay bir yöntem olsa da çoklu ilaç analizlerinde matriks etkilerinden dolayı yeterli seçicilik sağlanamayabilir. LLE ve SPE yöntemleri gerekli seçiciliği sağlayabilir. LLE yönteminde genellikle daha fazla çözücü kullanılır. SPE yönteminde daha az çözücü kullanılmasına rağmen daha pahalı bir yöntemdir.

## **7. SONUÇ**

Tedaviyi bireyselleştirerek kişiye özel kılan TİDİ, SSGİ kullanımında ilaç-ilaç etkileşimlerini ve olası yan etkileri önlemek için dozun ayarlanmasında önemlidir. SSGİ'lerin terapötik aralıkları ng/mL düzeyinde olduğundan hassas ve seçici yöntemler gerekmektedir. LC-MS/MS yöntemi bu seçicilik ve hassasiyete sahip olmasının yanına sıra kısa analiz sürelerine de sahiptir Bu sebeplerden dolayı LC-MS/MS cihazları SSGİ'lerin TİDİ'sinde vazgeçilmez bir parçadır.

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