BÖLÜM 3

Atriyal Fibrilasyon Patogenez ve Mekanizmaları

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GİRİŞ

Son yüzyılda, atriyal fibrilasyon (AF), tüm kalp ritim bozuklukları arasında en çok araştımalar yapılan aritmidir, yapılan çalışmalar ışığında AF patogenezi ile ilgili önemli mesafe katedilmiştir(1). AF insanlarda en sık görülen aritmidir ve insidansı ilerleyen yaşla birlikte artar. AF prevalansı genel popülasyonda %2 iken 80 yaş ve üzerindekilerde %10-12 arasında değişmektedir (2). Küresel Hastalık Yükü'ne göre, AF'nin tahmini prevalansı 33,5 milyon kişidir, çünkü birçok ülkede nüfusun %2,5-3,5'ini etkiler (3). Hastalığın histolojik ve elektrofizyolojik yönleri üzerine yapılan çalışmalar, hastalığın daha iyi anlaşılmasına, tedavi olanaklarının iyileştirilmesine ve hastaların yaşam kalitesinin etkin bir şekilde iyileştirilmesine yol açmıştır (1).

Aritminin patogenezinden sorumlu olan birincil faktörü kuşkusuz yaşlanma oluşturmaktadır (4). Ek olarak, arteriyel hipertansiyon, obezite, diabetes mellitus ve genetik faktörlerin de Framingham çalışmaları tarafından hastalığın önemli predispozan faktörleri olduğu doğrulanırken, çoklu diyet bileşenlerinin AF oluşumunu azaltan koruyucu bir rol oynadığı görülmektedir (5-7).

ATRİYAL FİBRİLASYONUN HÜCRESEL VE MİTOKONDRİYAL MEKANİZALARI

Atriyal fibrilasyon etyolojisinde altta yatan en çok kabul edilen mekanizmalar, re-entry ve ektopik aktivitedir. Re-entry, işlevsel veya yapısal patolojik bir substrat etrafında sürekli ileti yayılımına dayanan patofizyolojik bir kavramı tanımlar. Re-entrynin meydana gelmesi, fibrotik bir atriyal zemin ve bir tetikleyici gerektirir. AF, çeşitli iyon akımlarının elektriksel yeniden şekillenmesi ile ilişkilidir (8). Bu, AF'nin patofizyolojisinde merkezi bir rol oynadığı düşünülen, re-entrynin oluşması ve devamlılığı için bir substrat sağladığı düşünülen fbrozis ile daha da kötüleşir (7).

Özellikle pulmoner venlerde (PV'ler) meydana gelen ektopik aktivite, AF başlangıcında merkezi olarak yer alır (7). Bir dizi faktör, hem

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fibrozis yoluyla atriyumun yapısal yeniden şekillenmesinde rol oynuyor gibi görünmektedir. Serum plazma ve atriyal doku arasında miR-21 gibi m-RNA konsantrasyonlarında farklılıklar gözlenmiştir (111). Çalışmalar miR-133b, miR-328 ve miR-499'un Ca2+ ve K+ kanallarının aktivitesini düzenleyen iyonu fonksiyonel olarak kontrol ettiğini göstermiştir (112). Akut yeni başlangıçlı AF ve kronik AF'si olan hastaların kan dolaşımındaki konsantrasyonları, AF'si olmayan veya iyi kontrol edilen AF'si olanlardan daha yüksekti (113, 114). Sonuç olarak, AF'nin güçlü genetik arka planı ve m-RNA polimorfizmlerinin erken tespiti konusunda daha ileri çalışmaların yapılması gerekmektedir. SNP'ler ayrıca potansiyel biyobelirteçler olarak AF hastalarının tanısını ve yönetimini iyileştirebilir.

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