BÖLÜM 28

Male Faktör İnfertilitesi ve Genetik

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GİRİŞ

İnfertilite, (1 yıl korunmasız ilişkiye rağmen spontan gebelik elde edilememesi) çiftlerin yaklaşık %15'ini etkiler (1). Vakaların yaklaşık yarısından tek başına veya kadın faktörleriyle birlikte erkek faktörü sorumludur. Erkek infertilitesi, biraz da doğası gereği, büyük ölçüde açıklanamamaktadır. Erkek infertilitesi, testislerde spermin tam yokluğundan sperm kalitesinde belirgin değişikliklere kadar, oldukça heterojen fenotipik prezentasyonları olan karmaşık, çok faktörlü patolojik bir durumdur (2,3).

Erkek infertilitesini etkileyebilecek birçok risk faktörü ve sebep bulunmaktadır. Bunlar arasında yaşam tarzı, endokrin hastalıklar, testiküler travma, kriptorşidizm, varikosel, genitoüriner infeksiyonlar, iatrojenik sebepler, cerrahi tedaviler, metabolik hastalıklar ve genetik sebepler sayılabilir. Erkek infertilitesi, genetik veya epigenetik varyasyonların veya her ikisinin sonucu ortaya çıkabilen, heterojen ve yaygın bir durumdur. Gen ekspresyonunun epigenetik kontrolü hem spermin fonksiyonu hem de dölleme yeteneğinde çok önemli bir rol oynamaktadır (4). Genetik sebeplerin erkek faktör infertilite vakalarının %15. %30 'undan sorumlu olduğu ve erkek infertilitesinin tüm major etyoloji kategorilerine katkıda bulunduğu düşünülmektedir (2,5,6). Bu sebepler arasında Yq

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Sperm DNA hasarına ilişkin geleneksel tıbbi düşünce, epididimal ortamın spermleri koruduğu ve spermin olgunlaşmasını desteklediği fikrini desteklemiştir. Bununla birlikte, 2000'lerin başındaki hayvan çalışmaları, testisten cerrahi olarak ekstrakte edilen spermlere kıyasla epididimden veya ejakülattan toplanan spermlerde daha yüksek seviyelerde DNA hasarı ve azalmış fertilizasyon oranları bildirerek bu inançlarla çelişmiştir (421).

Epididimin sperm DNA fragmantasyonundaki rolü, Gawecka ve arkadaşları tarafından da araştırılmıştır, (422) bir murin modelinde epididim ve vas deferens içindeki sıvının sperm kromatin fragmantasyonunu aktive ettiğini bildirmişlerdir.

İnsanlarda yayınlar testiküler spermde daha düşük DNA fragmantasyonu seviyelerini göstermiştir ve bazı yazarlar, ejakülat spermi yerine testiküler sperm kullanan hastalarda ICSI ile daha yüksek canlı doğum oranlarını belgelemişlerdir (423,424).Ancak, sperm DNA hasarının tam etiyolojisi bilinmemektedir ve epididimal ve testiküler sperm ile üreme sonuçlarını karşılaştıran çalışmalar çelişkili ve sonuçsuzdur (418). Spermatozoada DNA hasarının meydana geldiği yer olarak epididimi destekleyen bir dizi kanıta rağmen, insan çalışmaları testiküler sperminin daha yüksek fertilizasyon oranları veya canlı doğum oranları ürettiğine dair üstünlüğünü göstermede başarısız olmuştur (425,426). 2018'de yapılan bir metaanaliz, yüksek derecede DNA fragmantasyonu olan hastalarda, daha düşük klinik gebelik oranları ve daha az yüksek kaliteli embriyo olduğunu göstermiştir, ancak canlı doğum oranlarında önemli bir fark gösterilememiştir (427).

Sperm DNA'sına verilen hasar ART başarısında ve bir çiftin doğurganlık potansiyelinde kesinlikle bir rol oynayabilse de, sperm DNA fragmantasyonu için testler henüz klinik sonuçlarda anlamlı iyileşmelerle sonuçlanmamıştır.

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