

BÖLÜM 10

PEDİATRİK KANSER HASTALARINDA FERTİLİTENİN KORUNMASI

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GİRİŞ

Pediyatrik kanser hastalarında uygulanan kemoterapi ve/veya radyoterapi germ hücrelerine zarar vermektedir. Gelişen tedavi protokolleri ile bu hastalarda yaşam oranı %80 civarında olmakla birlikte, uygulanan tedaviler üreme fonksiyonlarına zarar vererek bu hastaların %48'inin infertil olmasına neden olmaktadır⁽¹⁾. Tedavi sonrası infertilite probleminin major endişelerden biri olması nedeniyle fertilitenin korunması kanser tedavisinin bir parçası hâline gelmektedir. Erişkin kanser hastaları için kanser tedavisi öncesi spermlerin dondurulması fertilitenin korunmasında standart metottur⁽²⁾. Ancak, pediyatrik kanser hastalarında sperm üretimi henüz başlamadığından fertilitenin korunması için erişkin kanser hastalarında uygulanan sperm kriyoprezervasyonu bu hastalar için mümkün değildir⁽³⁾. Pediyatrik kanser hastaları pubertenin başlaması ile spermatogenez sürecini tamamlayarak sperme farklılaşacak olan ve fertilitenin devamlılığını sağlayacak olan spermatogonyal kök hücrelere sahiptirler ve spermatogonyal kök hücre (SKH) temelli yaklaşımlar hastalara kendi biyolojik çocuklarına sahip olma imkanını sağlayabilir. Kanser tedavi protokolleri uygulanmadan önce SKH içeren testis biyopsilerinin testiküler hücre süspansiyonu (THS) veya testiküler doku (TD) olarak dondurulması fertilitenin devamlılığının sağlanmasında çeşitli tedavi seçeneklerine imkan vermektedir⁽⁴⁾. Testis biyopsileri çözüldükten sonra SKH'ler *in vitro* kültür koşullarında çoğaltılıp hastalara transplante edilerek fonksiyonel sperm elde edilebilir veya SKH'ler *in vitro* kültür koşullarında sperme farklılaştırılabilir. Spermatogonyal kök hücreleri ve testiküler niş ait somatik hücreleri içeren heterojen THS sırt bölgesine/testise transplante edilerek *de novo* morfogenez süreci ile hücrelerin yeniden organize olması ile hormon ve sitokin salgılanması gibi organ spesifik özel-

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