KONU 18

Bilgisayarlı Tomografide ve PET/BT Uygulamalarında Sedasyon

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Klinik tanıların desteklenmesi amacıyla uygulanan tanısal işlemler arasında BT ve PET/BT önemli bir yere sahiptir. Her ikisinde de görüntüleme işlemi için iyonizan radyasyon kullanılmaktadır.

▶ Bilgisayarlı Tomografi

Radyolojik görüntüleme yöntemlerinden biri olan BT ilk olarak 1970'li yıllarda kullanılmaya başlanmıştır. Ülkemizde de tanısal ve girişimsel amaçlı BT yaygın olarak kullanılmaktadır. Sağlık Bakanlığı verilerine göre 2015 yılında 13.675.737 BT çekilmiştir. Amerika Birleşik Devletleri'nde yılda 62 milyondan fazla BT çekimi yapılmakta bunların en az 4 milyonu da çocuk hastalarda kullanılmaktadır (1).

Bilgisayarlı tomografi, yüksek oranda radyasyonun kullanıldığı bir yöntemdir. Karşılaştırma açısından bakıldığında; postero-anterior akciğer filmi (PA **X**-ray) ile 0.01 milliSievert (mSv) düzeyinde bir radyasyon maruziyeti oluşurken, erişkin bir hastanın abdominal BT görüntülemesinde 10 mSv düzeyinde (yaklaşık 1000 katı) bir radyasyon maruziyeti oluşmaktadır. Abdominal BT, abdominal direkt grafi ile karşılaştırıldığında 0.25 mSv (yaklaşık 40 kat) radyasyon maruziyeti söz konusu olmaktadır (2).

İyonizan radyasyonun en bilinen etkilerinden biri DNA hasarı yaparak gen veya kromozomal mutasyonlara neden olması ve farklı evrelerde kanser gelişimine yol açabilmesidir. İyonizan radyasyonun mutasyon yapma mekanizması, spontan kanser veya diğer karsinojen maruziyetlerinin neden olduğu kanserlerdeki mekanizmalarla aynıdır (3). **X** ışınlarına bağlı karsinogenezis, rastlantısal (stokastik) olup kanser oluşumu için belirli bir alt veya üst doz bulunmamaktadır (4). İyonizan radyasyon maruziyeti sonrasında kanser oluşumu için solid tümörlerde en az 5 yıl gerekmekte iken,

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