

Bölüm 31

Hipertansiyonun Cep Telefonu ve Wi-Fi Kaynaklı Elektromanyetik Alanlarla İlişkisi

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ELEKTROMANYETİK ALANLAR

19. yüzyılda elektriğin keşfi ile birlikte teknolojik gelişmeler hızla artmaya başlamış ve birçok teknolojik cihaz hayatımızın vazgeçilmez unsurları haline gelmiştir. Her ne kadar bu teknolojik gelişmeler hayatımızı kolaylaştırıyor olsa da, elektrikle çalışan cihazlar etraflarına bir akım yaymakta, bu da sağlığımızı olumsuz yönde etkileyebilmektedir.

Elektrik yüklü bir sistem, çevresindeki her noktada bir elektrik alan oluşturur ve etki alanında bulunan diğer cisimlere kuvvet uygular. Buna elektrik alan denir. Elektrik yüklerinin hareketi sonucu oluşan elektrik akımı ise elektromanyetik alanı oluşturur.

Elektromanyetik alanlar ve insan sağlığından bahsederken öncelikle radyasyon, iyonlaştıran ve iyonlaştırmayan radyasyon terimlerine açıklık getirmek gerekir.

Elektromanyetik dalgalar ya da parçacıklar şeklindeki enerji yayımı veya aktarımına radyasyon (ışınım) denir. Bir atom çekirdeğinin kararsız durumdan daha kararlı bir duruma geçerken elektromanyetik dalga veya parçacık şeklinde enerji yayılması olayıdır⁽¹⁾.

Başlıca radyasyon türleri; iyonlaştırıcı ve iyonlaştırmayan radyasyon olmak üzere iki grupta toplanabilir.

İyonlaştırıcı radyasyon (300 GHz üstü nükleer radyasyon); madde içerisinden geçerken enerjisini ortama aktarmak suretiyle, ortamdaki atomları doğrudan veya dolaylı yollarla iyonlaştıran radyasyon türüdür. Örneğin; x ve gama-ışınları ile α , β ve nötron parçacıklarının yayılması gibi⁽¹⁾.

Yüksek enerjili iyonlaştırıcı elektromanyetik dalgalar, DNA'da ve dokularda hasara yol açabilirler. Atom bağlarını kopararak da hücrelerdeki moleküllerin parçalanmasına sebep olurlar.

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