

BÖLÜM 31

VİTAMİN E VE NÖROLOJİK HASTALIKLAR

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GİRİŞ

Vitamin E eksikliği birçok nörolojik hastalık ile ilişkilendirilmiştir. Artan kanıtlar, özellikle oksidatif stresin nörolojik hastalıkların patofizyolojisinde önemli bir rol oynadığını göstermektedir (1). Süperoksit anyonları, hidroksiradikaller ve hidrojen peroksit içeren reaktif oksijen türleri (ROS), normal ve anormal hücrel reaksiyonların bir sonucu olarak üretilir (2). ROS'un, lipid peroksidasyonu, protein oksidasyonu ve DNA oksidasyonu şeklinde üç ana mekanizma yoluyla hücre hasarına neden olduğu bilinmektedir. Bu nedenle hücreler, oluşan ROS ve oksidatif stresle başa çıkmak için çeşitli savunma ve onarım mekanizmaları geliştirmiştir. Antioksidanlar, ilk savunma hattını temsil etmekte olup bu savunma hattında süperoksit dismutaz, katalaz, glutatyon peroksidaz gibi enzimler ile E ve C vitaminleri gibi küçük moleküller yer alır. E vitamininin santral sinir sistemindeki (SSS) rolü tam olarak aydınlatılamamıştır ancak çeşitli nörolojik hastalıklarda (Parkinson, Alzheimer vb.) peroksit ve serbest oksijen radikallerinin

etkilerini nötralize ederek hücre zarlarını oksidatif hasardan koruduğu yapılan çalışmalar ile gösterilmiştir. Ayrıca vitamin E antioksidan özelliklerine ek olarak, spesifik enzimleri ve böylece sinyal ileti mekanizmalarını düzenleyebilen, nöron koruyucu olabilen bir anti-inflamatuar ajan olarak da görev yapabilmektedir (3).

E VİTAMİNİ YAPISI VE KAYNAKLARI

E Vitamini, gıdalarda bulunan dört tokoferol (α -, β -, γ - ve δ -tokoferoller) ve dört tokotrienol (α -, β -, γ - ve δ tokotrienoller) için ortak bir terimdir. Bu formlar birbirlerine dönüştürülemezler ve sadece α -tokoferol insan E vitamini gereksinimini karşılar (4). Tokoferollerin bir kromanol halkası ve bir fitil kuyruğu varken, tokotrienollerin bir kromanol halkası ve doymamış kuyruğu bulunur. Kromanol yapısı üzerindeki metil gruplarının sayısı ve konumu bakımından farklılıklara göre α -, β -, γ - ve δ -izomer formlar vardır. Tokoferoller ve tokotrienollerin yapıları şekil 1'de gösterilmiştir.

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ya da α -TTP'nin bu süreçteki tam rol(ler)i gibi bazı kritik sorular cevapsızdır. Benzer şekilde, nörolojik hastalıklara eşlik eden E vitamininin durumları ve terapötik kullanımı hakkında daha fazla çalışmaya ihtiyaç vardır. Bununla birlikte şiddetli eksiklik nadir olduğundan, E vitamini seviyeleri rutin olarak ölçülmez ve hafif eksikliklerin sonuçları dikkate alınmaz. Gelecekteki multidisipliner çalışmaların bu sorunları ele alması, yeni anlayışlara yol açması ve karşılığında halk sağlığına fayda sağlaması umulmaktadır.

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