BÖLÜM 2

BOTULİNUM NÖROTOKSİNİN FARMAKOLOJİSİ

Bahar ERBAŞ [1]

GİRİŞ

Botulinum toksini (BoNT) gram pozitif, anaerob, sporlu bir bir bakteri olan Clostridium Botulinum ve akraba türlerinin (Clostridium Butyricum, Clostridium Barati, Clostridium Argentinensis ve diğer birkaç türün) otolizi ile ortaya çıkan, bilinen en güçlü protein nörotoksindir (1–3). Clostridium Botulinum suşları dört gruba ayrılmaktadır (grup I, II, III ve IV) (1). Grup I ve II insandaki botulizmden sorumlu iken, grup III diğer hayvan türlerinde botulizm yapar, grup IV'ün ise botulizm yapmadığı belirtilmektedir (4).

Botulinum toksininin A'dan G'ye kadar sınıflandırılmış, antijenik olarak farklı 7 serotipi vardır (5). Her serotipin amino asit sekanslarına göre subtipleri bulunur (5). Grup I bakteriler A, B ve F, grup II bakteriler B, D ve E serotiplerini üretir (1). A, B, E ve F insanlarda ve hayvanlarda botulizm yapabilir, E ve F sadece topraktan izole edilmiştir ve botulizm yaptıkları bildirilmemiştir (3). BoNT/C daha çok hayvanlarda botulizm yapar (4). BoNT serotipleri ve subtipleri, farklı farmakodinamik özellikler ve potensler gösterir (3,5). Mevcut anti-serumlar tarafından nötralize edilemeyen BoNT'lar ve BoNT benzeri proteinler yakın zamanda tanımlanmış ve klasik terminoloji dışında sınıflandırılmıştır (ör/ BoNT/X). Birden fazla serotip içeren ve mozaik veya kimerik nörotoksin olarak tanımlanan nörotoksinler de hibridizasyonla üretilmiştir(ör/ BoNT/CD) (4–6).

BOTULİNUM NÖROTOKSİNİN ETKİ MEKANİZMASI

Nöromuskuler Bileşke Düzeyinde

BoNT, iskelet kasları ve otonom sinirlerdeki kolinerjik terminallerin presinaptik plazma membranına karşı yüksek afinite gösterir (7). Temel olarak, çizgili kasları innerve eden

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