

Kas Gevşeticiler ve Antagonizma

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Giriş

Nöromüsküler bloğun başlama, devam ve sonlanma zamanları ile birlikte; blok için gerekli ilaç dozu tüm hasta grupları için tartışma konusu olduğu gibi yaşlı hasta popülasyonunda da önem arz etmektedir (1). Yaşlı hastalarda uygulanacak anestezi tipi ve cerrahi işlemin yanı sıra, yaşlanmaya bağlı olarak değişen vücut yapısı, nöromüsküler blok özelliklerini etkilemektedir. Dünya genelinde yaşlı nüfusun artmasına bağlı olarak geriatrik hastalara kas gevşetici ajan kullanımını zorunlu kılan birçok cerrahi işlem uygulanmaktadır. Tüm bu sebeplerden dolayı geriatrik hastalarda kas gevşetici ve reverse ajan kullanımında değişen vücut ve ilaç özellikleri göz önüne alınmalıdır. Bu bölümde kas gevşetici ve antagonizmanın yaşlı hastalar üzerindeki etkilerine değinilecektir.

I. Nöromüsküler Kavşak Yapısındaki Değişiklikler

Bir motor nöron ve bir kas hücresi nöromüsküler kavşakta birleşir. Motor nöron aksonunun altında kalan kas lifi plazma membranına motor son plak adı verilir. Akson sonlanma kısmı ile motor son plak arasında oluşan bağlantı ise kas sinir kavşağı (nöromüsküler kavşak) olarak adlandırılır. Motor nöronların akson terminal bölgelerinde asetilkolin (Ach) içeren veziküller bulunur. Bir sinir aksiyon potansiyelinin sinir ucunu depolarize etmesi sonucu, Ach molekülü depo veziküllerden nöromüsküler kavşağa salınır. Asetikolin molekülünün nöromüsküler kavşakta nikotinik reseptörlere bağlanması, motor son-plak potansiyelini oluşturur. Yeterli Ach molekülünün motor son-plak potansiyeli oluşturması sonucu kas kontraksiyonu meydana gelir. Kas sinir kavşağındaki Ach'in, asetilkolinesteraz enzimi tarafından yıkılmasıyla kas gevşemesi gerçekleşir. Nöromüsküler bloke edici ajanlar (NMBA) depolarizan ve non-depolarizan ajanlar olarak ikiye ayrılır. Depolarizan kas gevşeticiler yapı olarak Ach'e çok benzer olup, Ach'in bağlandığı reseptörlere bağlanarak kas gevşemesini sağlar. Non-depolarizan kas gevşeticiler

azalması, nöromusküler bloğun devamı ve ek doz gereksinim hesabı için hastaların monitorize izlenmesini zorunlu kılar. Ayrıca hastalarda antikolinesterazlar veya sugammadeksin kullanımını da monitorizasyona göre olmalıdır. Geriatrik hasta popülasyonunda cerrahi işlem uygulamasında kas gevşetici ve reverse ajanların farmakokinetik ve farmakodinamik özelliklerinin iyi bilinmesi gerekliliğinin yanısıra yaşlanmayla oluşan değişiklikler de göz önüne alınarak anestezi planı yapılmalıdır.

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