ANESTEZİ UYGULAMALARINDA KAPALI DÖNGÜ SİSTEMLERİ

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GİRİŞ

Perioperatif dönemde anestezistlerin temel sorumluluklarından biri hastanın yaşamsal belirtilerini izlemek, güvenli ve etkili anestezi sağlamaktır. Anestezistler iyi bir klinik eğitime rağmen, aynı anda birden fazla görev gerektiren durumlarla karşılaştıklarında zaman zaman endişelenirler, bu da iş yüklerini ve psikolojik streslerini arttırır ve hatta tükenmişliğe yol açabilir (1). Cerrahi prosedürler sırasında anestezistler, kabul edilebilir bir anestezi düzeyine ulaşmak için anestezik ilaçların dozajını sürekli olarak ayarlarlar.

Ameliyat sırasında anestezik maddenin verilmesi geleneksel olarak anestezistler tarafından manuel olarak kontrol edilir. İlk adımda, hastanın kilosuna, yaşına ve cerrahi operasyonun tipine göre uygun ilaç ve dozaj seviyesinin seçilir. Bir sonraki adımda, hasta güvenliği ile ilgili yaşamsal belirtileri izlemek için ameliyathanedeki tıbbi ekipmandan gelen belirteçlerle ilgilenir ve beklenmedik durumlarda gerekli müdahaleler yapılır. Cerrahi işlem sırasında öngörülemeyen koşulların üstesinden gelmek anestezistin deneyim ve bilgisine bağlıdır. Manuel kontrol ile anestezi derinliğinin sağlanması yoğun emek gerektiren bir süreçtir ve klinisyenin dikkatini kritik eylemlerden uzaklaştırabilir, hatta bazı durumlarda hastanın güvenliğini tehdit edebilir.

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SONUÇ

Kapalı döngü kontrol sistemlerinin daha az hipnotik tüketimine, daha uzun indüksiyon süreleri, daha iyi hemodinamik stabilite, daha az derin anestezi seviyeleri (BIS <40) ve daha hızlı iyileşme ile sonuçladığı bulunmuştur (24, 56).

Teknolojileri karşılaştırmak ve değerlendirmek için yapılan klinik çalışmalar sadece geliştiricilerin kendileri tarafından yapılmıştır, çalışmalarda hem olumlu hem de olumsuz sonuçlar bulunmuştur (57). Çalışmaların çok sayıda sınırlamaları vardır; teknikler, yoğun bakım ünitelerinde veya anestezi sonrası bakım ünitelerinde hastalar için uygulanabilecek tüm ilaç türleri altında doğrulanmamıştır.

Ayrıca, bazı teknolojiler halihazırda ticari olarak mevcut olsa bile, diğerleri hala geliştirme aşamasındadır ve bu nedenle pazarlanmamaktadır.

Hem fizyoloji hem de teknoloji araştırmalarındaki ilerleme, karmaşık anestezi sürecinin otomasyonunu mümkün kılmış olsa da, gerçek kontrol stratejileri, standart hastane kullanımına entegre edilmesi gereken durumdan çok uzaktır. Bu sorun, mevcut kontrol sistemlerinin, anesteziyle ilgili tüm ilaçların (hipnoz, analjezi, nöromüsküler blokaj, hemodinamik sabilite için kullanılan) entegre edilmesiyle oluşan anestezinin gerçek yaşam klinik rutinini kopyalamamasıyla açıklanabilir.

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