

Kritik Travma Hastalarında Koagülasyonun Yönetimi

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Türkiyedeki ölümlerin %5'inin sebebi olan travma, önde gelen mortalite ve morbidite sebeplerinden biridir (1). Dünya Sağlık Örgütü (DSÖ) verilerine göre dünya çapında global hastalık yükünün %12'si ve ölümlerin %9'u travma nedeniyle yaşanmaktadır (2). Bu bağlamda travma, önde gelen ve ayrıntıyla incelenmeye değer bir halk sağlığı sorunudur. Trafik kazaları, yüksekten düşme, boğulma, zehirlenme, şiddet görme, kişinin kendine verdiği zararlar, yanma ve savaş eylemlerinde ortaya çıkan hasarların hepsi travma kapsamında değerlendirilir (3).

Hemoraji, bütünlüğü bozulmuş damar yapısı nedeniyle gelişen akut kan kaybıdır (4). Travma hastalarının başarılı bir şekilde tedavi edilmesinde; kanamanın hızla fark edilmesi, kontrolü ve kan ürünlerinin yeterli düzeyde replasmanı kilit rol oynar (5). Sağlıklı bir yetişkinin vücudunda yaklaşık 5 litre kan bulunur ve bu hacmin %15'ine kadarının kaybı genellikle iyi tolere edilir. Bu grup sınıf 1

hemoraji olarak adlandırılır. Hastaların vitaleri normal sınırlardadır. Total kan hacminin %15-30'unun kaybedildiği kanamalar sınıf 2 hemoraji olarak adlandırılır. Hastalar halsizlik ve bulantı hissederler. İlımlı taşikardi genellikle eşlik eder. Hastaların ekstremiteleri soğuk ve renkleri soluktur. Sınıf 3 hemorajide total kan hacminin %30-40'ı kaybedilmiştir. Hastaların kalp hızı artmış, kan basıncı azalmış, kapiller dolun zamanları uzamıştır. Bu bulgular azalan kan hacminin periferde değil, vital organlara yönlendirilmesi nedeniyle ortaya çıkar. Hastalarda hemen her zaman bilinç değişiklikleri gözlenir. %40'tan fazla hacimdeki kan kayıpları sınıf 4 hemoraji olarak adlandırılır. Bu hastalarda idrar çıkışı genellikle durmuştur, periferik nabızları alınamayabilir. Hastalarda hemorajik şok ve dolaşım bozukluğuna bağlı metabolik asidoz tablosu hakimdir ve acil müdahale gerekmektedir (6) (Tablo 1). Sistolik kan basıncının 90 mmHg'nin altına düşmesi hemorajik şok olarak kabul edilse

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zukluğunda bir miktar yararı olabileceği öne sürülmektedir (79). Fakat bahsi geçen üç tedavinin de travmadaki kullanımını için yeterli veri bulunmamaktadır.

Tıpkı tedavi kararı verilmesi sürecinde olduğu gibi tedavi takibinde de standart koagülasyon testleri, TEG'e göre çok daha sınırlı bilgi sağlar. Bu yüzden TEG bulunan merkezlerde tedavi takibinde mutlaka TEG kullanımı önerilmektedir. TEG yoksa tedaviye yanıt ardışık PT, INR, aPTT, tam kan sayımı (hemoglobin ve trombosit seviyeleri) ve fibrinogen seviyeleri ölçümüyle takip edilir. Asidoz ve perfüzyonu takip etmek için arteriyel kan gazı takibi yapılır. Normotermi sağlanana kadar ısı probu ile sıcaklık takibi ve abdominal kompartman sendromunu için karın içi basıncının ölçümü de önerilmektedir (80, 81).

Sonuç

Travma ilişkili koagülopati, transfüzyon ihtiyacında artışa, yoğun bakım ünitesi ve hastanede kalış süresinde uzamaya, mekanik ventilasyon ihtiyacı, çoklu organ yetmezliği ve mortalite riskinde artışa sebep olur. Tanının hızla konması ve gerekli müdahalelere erken dönemde başlanması, transfüzyon ihtiyacı ve komplikasyon gelişme riskini azalttığı ve sağ kalımı iyileştirdiği için son derece önemlidir.

Doku hasarı, asidoz, hipotermi, sıvı veya kan ürünü uygulamaları sonrası gelişen hemodilüsyon gibi birçok faktör travma sonrası koagülopatide rol alır. Ayrıca travmalı hastalarda, TİK adı verilen bir hemostaz dengesizliği de gelişir.

Travma hastalarının hemostaz açısından değerlendirilmesinde PT, INR, aPTT, fibrinogen düzeyi ve trombosit sayısını içeren standart pıhtılaşma testleri yaygın olarak kullanılır. Önceden pıhtılaşma kusurları olmayan hastalarda, başvuru sırasında normalin 1,5 katından fazla uzamış PT ve/veya aPTT dü-

zeyleri TİK varlığını gösterir. TİK'in, trombosit ve fibrinogen seviyeleri normal olan hastalarda da gelişebildiği unutulmamalıdır.

TEG, pıhtı başlangıcı, pıhtı kuvveti ve fibrinolitik hakkında bilgi sağlar. TİK tanısı ve tedavisinde önemli bir araçtır. Masif transfüzyon ihtiyacı varlığında, tedavi kararında standart pıhtılaşma tahlillerine dayalı tedavi TEG ile hedefe yönelik resüsitasyon önerilmektedir. TEG'nin mevcut olmadığı merkezlerde, standart pıhtılaşma tahlilleri tarafından yönlendirilen ampirik plazma ileri transfüzyon stratejileri standart bakım olmaya devam etmektedir.

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