

DENEYSEL AĞRI MODELLERİNE YAKLAŞIM

71 BÖLÜM

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*“Divinum est opus sedare dolarem” Ağrı dindirmek tanrı sanatıdır.
Hipokrat*

GİRİŞ

Ağrı hem sinir bilimlerinin hem de tıbbi araştırmaların geniş bir alanıdır. Deneysel ağrı araştırmalarında amaç; ağrının özelliklerini doğasını açıklamak, herhangi bir maddenin ağrıya olası etkilerinin araştırılmasıdır. Tarih öncesi dönemlerden beri insanlar ağrıyı dindirmek için içgüdüsel davranışlar, dinsel inançlar, büyü ve ilaçlara başvurmuştur. Ağrı kompleks yollar ve nörotransmitterlerin oluşturduğu fizyolojik bir süreç olmanın ötesinde subjektif ve emosyonel bir deneyimdir. Ağrının yaygınlığı ve insana etkisinin büyüklüğüne rağmen, tedavisi son derece zordur.

Ağrı beyinde algılanan ve beyinde çözümlenen bir olaydır. Bu algılama kişinin ülkesine, cinsiyetine hatta kişisel özelliklerine göre farklılık gösterebilir. Bu yüzden insanlar ağrıyı farklı algırlar. Deneysel ağrı modellerini anlamak için öncelikle ağrı terminolojisi (tablo1) kavranmalıdır(1).

Deneysel hayvan ağrı modelleri; altta yatan mekanizmaları ve potansiyel tedavileri daha iyi değerlendirmek için farklı klinik hastalıkları taklit edecek şekilde tasarlanmıştır(2). Ağrı süreçlerini anlamamızı sağlayan bu modeller 19. yüzyılın sonlarına dayanır (3). Hem hastalık modellerini hem de davranış ölçülerini daha iyi

Tablo 1. Ağrı terminolojisi (1)

Terim	Tanım
Ağrı	Gerçek veya potansiyel doku hasarı ile ilişkili veya bu hasar açısından tarif edilen hoş olmayan bir duyu ve duygusal deneyim
Nosisepsiyon	Zararlı uyarıların kodlanması ve işlenmesinin sinirsel süreçleri
Zararlı uyarı	Gerçek veya potansiyel olarak dokuya zarar veren bir olay
Nosiseptif ağrı	Nosiseptörlerin aktivasyonundan kaynaklanan ağrı
Nöropatik ağrı	Somatosensöriyel sistemi etkileyen bir lezyon veya hastalığın doğrudan bir sonucu olarak ortaya çıkan ağrı
Allodinili	Nosiseptif olmayan bir uyarana cevap olarak ağrı
Hiperalezi	Artmış ağrı hassasiyeti
Ağrı eşiği	Acı verici olarak algılanan bir uyarının minimum yoğunluğu(Looser,475)

Postoperatif Ağrı Modelleri

Hem yüzeysel hem derin doku hasarını ortaya çıkaran cerrahi uygulamalar sonrası ağrı oluşur. Aynı patolojiyi yeniden ortaya çıkarmak için arka pençe veya gastroknemius bölgesinde plantar yönüne deri, fasya ve kası içeren uzunlamasına 1cm kesi ile oluşturulan modeller geliştirilmiştir. Operasyondan önce ve sonraki 2. saat ve ardından 6-9 gün boyunca geri çekme tepkileri von frey filamentleri kullanılarak ölçülmüştür(61,62,63). Postoperatif ağrı modelleri günümüz cerrahisinde kullanılan otomatik ekartörlerin, laparoskopik yöntemlerin, sofistike prosedürlerin gelişme hızına ayak uyduramamıştır. Cerrahi süre, operasyon pozisyonu, cerraha bağlı faktörler nedeniyle model oluşturulması zor bir alandır. Gelecekte bu alanda ileri çalışmalar olacağı düşünülmektedir.

Sonuç

Hayvan deneylerinde tasarım ve uygulama standartlarının çerçevesinin net çizilmesi; bireysel makaleler gibi metaanalizler ve sistematik incelemelerin de kalitesini artıracaktır. Ağrının hayvan modellemesine duyulan ilgi arttıkça, biyobelirteçler, genetik çalışmalar, yeni ağrı modelleri bilim insanlarını heyecanlandırmaya devam edecektir.

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