BÖLÜM 3

Erkek Hipotalamus Hipofiz Gonadal AKS

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GİRİŞ

İnsanda ve diğer memelilerde, milattan sonra ikinci yüzyıldan itibaren yapılan çalışmalarda, hipotalamusun endokrin sistem regülasyonu, otonom ve davranış düzenlenmesinde önemli rol oynadığı gösterilmiştir. Hipotalamus endokrin sistemin kontrol merkezi olarak kabul edilmektedir. Beyin hacminin %2'sini oluşturan hipotalamus, hipofiz fonksiyonlarının ve homeostatik dengeninin düzenlenmesinde kilit rol oynamaktadır. Üreme fonksiyonunun düzenlenmesinde hipotalamus-hipofiz-gonad (HPG) aks anahtar rol oynamaktadır. Buna ilave olarak, bu aksta değişik fonksiyonlara sahip (nörosekretuvar, otonom, motor v.b.) nöronların birbirleri ile olan etkileşmeleride mevcuttur. Hipotalamusdan salgılanan Gonadotropin Hormon Relasing Hormon (GnRH) üreme fonksiyon regülasyonunda, anterior hipofiz bezi üzerinden pulsatil ve dalgalanma şeklinde salınımlarla, Folikül-uyarıcı hormon (FSH) ve Lüteinleştirici Hormon (LH) üretilmesine neden olur. LH Leydig hücrelerinde testosteron başta olmak üzere steroidogenesi stimüle ederken, FSH spermatogenezi uyarmaktadır.Ayrıca, kisspeptinlerin hipotalamik GnRH stimülasyonunda ve kisspeptin sinyal yolağını testislerde pubertenin başlatılmasında, spermatogenezin başlatılması ve ida-

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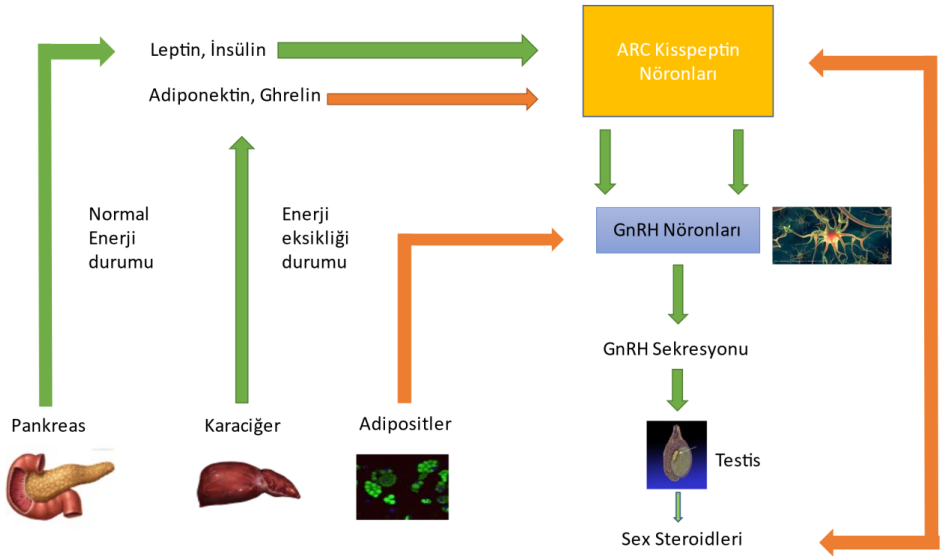

Şekil 3. Seks hormonlarının kisspeptin nöronları üzerinde negatif feedback etkisi vardır. Normal enerji durumunda insülin ve leptin stimüle ederken, ghrelin ve adiponektin enerji yoksunluğu durumunda inhibe edici etkileri vardır (85). Yeşil oklar stimüle edici etkiyi göstermekte, turuncu oklar ise inhibe edici etkiyi ifade etmektedir.

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