

BÖLÜM 5



HİPOKALSEMİ, REPRODÜKTİF SİSTEME ETKİSİ VE KLİNİK YÖNETİMİ

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VÜCUTTA KALSİYUM VE ÖNEMİ

Vücutta birçok dokunun normal fonksiyonu ve fizyolojik işlemleri için gerekli olan en önemli mineral maddeler kalsiyum (Ca), fosfor (P) ve magnezyumdur (Mg). Vücutta bulunan minerallerin %49'unu Ca, %27'sini P ve %24'ünü ise diğer mineral ve iz-mineraller oluşturmaktadır (1). Bununla birlikte vücut ağırlığının yaklaşık olarak %1,5'lik kısmı Ca ihtiva etmektedir. Ayrıca vücutta kalsiyumun; en büyük kısmı iskelet sisteminde (%99), geriye kalan kısmı ise yumuşak doku (%1) ve ekstrasellüler sıvılar (%0,2) olmak üzere üç temel yapıda bulunmaktadır (2-4).

Kan plazmasında kalsiyumun; yaklaşık olarak %50'si serbest veya iyonize formda, %42-48'i plazma proteinlerine bağlı ve %3-7'lik kısmı ise diğer maddeler (sitrat, bikarbonat, fosfat, laktat) ile kompleks halde bulunmaktadır. Kan plazmasında Ca, biyolojik olarak serbest (iyonize) formda aktif haldedir. Ancak kalsiyumun plazma proteinlerine bağlanması pH değişikliklerine bağlıdır ve bu durum plazma Ca düzeyini yakından etkilemektedir. Çünkü Ca albümin üzerindeki negatif yüklü veya anyonik bölgelere bağlanmaktadır. Örneğin

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Klinik ve subklinik hipokalsemili ineklerde reproduktif parametrelerin olumsuz etkilenmesinde ovaryum fonksiyonlarının geç başlaması, şekillenen postpartum uterus enfeksiyonları, özellikle yüksek süt verimli ineklerde metabolik değişikliklerin olmasından kaynaklandığı düşünülmektedir (17,69). Ayrıca kalsiyumun oositte önemli roller üstlendiği ve oosit maturasyonu ve fertilizasyon gibi aşamalarda intrasellüler Ca konsantrasyonunda meydana gelen değişikliklerle bu süreçlerin kontrolünde görev aldığı ifade edilmektedir. Bu nedenle postpartum erken dönem hipokalsemi şekillenen ineklerde folikül gelişimi ve oosit kalitesi etkilenmektedir. Buna bağlı olarak fertilitenin olumsuz etkilenebileceği de düşünülmektedir (85).

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