Bölüm 2

TANIDAN TEDAVİYE HİPERKALSEMİYE YAKLAŞIM

Betül ERİŞMİŞ[1]

GİRİŞ

Kalsiyum, %99 oranında kemikte depolanarak fosfatla birlikte kemiğin sertliğini sağlayan esansiyel minerallerden biridir. %40'ı plazma proteinlerine bağlı olarak, %50'si serbest veya iyonize formda, %10'u ise sitrat ve fosfat iyonları ile kompleks yapıda bulunur. (1) Hiperkalsemi, kalsiyum düzeyinin >10,5 mg/dL olması ile tanımlanan ve sıklıkla karşılaşılan klinik bir problemdir. Dolaşımdaki kalsiyumun artmasında altta yatan patoloji; idrarla kalsiyum atımında azalma, gastrointestinal kalsiyum emilimde artma ve / ve ya artmış kemik rezorbsiyonudur. Bazı durumlarda ise bu mekanizmaların bir ya da daha fazlası birarada bulunmaktadır. Kalsiyum homeostazında yer alan hormonlar ve etkileri Tablo 1'de gösterilmiştir. Hiperkalsemi; klinik belirti ve bulguların bulunma sıklığı ile birlikte şiddeti ve tedaviye yaklaşım açısından; hafif (<12 mg/dL ya da <3 mmol/L), orta (12-14 mg/dL ya da 3 – 3,5 mmol/L) ve ciddi (> 14 mg/dL ya da 3,5 mmol/L) olmak üzere 3'e ayrılır.

Tablo 1. Kalsiyum Homeostazında Yer Alan Hormonlar ve Etkileri

Hormon	Kemikteki Etkisi	Barsak Etkisi	Böbreklerdeki Etkisi
Paratiroid hormonu ↑ Ca++, ↓PO4	Osteoklast rezorbsiyonu	İndirekt etki 1-hidroksilasyon ↑ kalsitriol	Ca++ rezorbsiyonu ve PO4 ekskresyonu, 1-hidroksilasyon aktivasyonu
Kalsitriol (vitamin D) ↑Ca++, ↑PO4	Direkt etkisi yok	↑Ca++ ve PO4 emilimi	Direkt etkisi yok
	Osteoblastları destekler		
Kalsitonin ↓Ca++, ↓PO4	Osteoklast rezorbsiyonunda inhibisyon	Direkt etkisi yok	Ca++ ve PO4 atılımını arttırır

Ca++ = kalsiyum; PO4 = fosfat

1 Dr. Öğr. Üyesi, SBÜ Bakırköy Dr. Sadi Konuk Eğitim ve Araştırma Hastanesi ve SBÜ SHMYO Evde Hasta Bakımı Programı, betul_erismis@yahoo.com

Denosumab	4-10 gün	4-15 hafta	RANKL inhibisyonu yoluyla kemik rezorbsiyonunu önler	
Kalsimimetikler	2-3 gün	Tedavi süresi boyunca	Kalsiyum duyarlı reseptör agonisti, PTH'yi azaltır (paratiroid karsinomu, sekonder hiperparatiroidi)	

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