

BÖLÜM 34

Kalsitonin

■ Prof. Dr. Ersin AKARSU

Özet

Kalsitonin tiroid bezinin C hücrelerinden salgılanan 32 amino asitli bir hormondur. Kalsitonin sekresyonu serum kalsiyumunda artışlarla uyarılır ve kalsitonin hiperkalsemi gelişimine karşı koruyucudur. Kalsitonin, gastrin gibi gastrointestinal hormonlar tarafından da uyarılır. Kandaki kalsitonin konsantrasyonlarının ölçümü, C hücresi aktivitesini yansıtır ve genel olarak immünolojik test yöntemleri ile gerçekleştirilir. Bununla birlikte, serum kalsitonin değerlerinin sonuçlarını etkileyebilecek analitik, fizyolojik, farmakolojik ve patolojik faktörler vardır.

Kalsitonin, renal dihidroksivitamin D₂ [1,25(OH)₂D₃ 1,25(OH)₂ vitamin D (1,25D)] üretimini, paratiroid hormon ve hipofosfatemiden farklı olarak proksimal tubuldeki bir bölgede uyarmaktadır. Gebelik ve laktasyon sırasında, hem kalsitonin hem de 1,25(OH)₂D₃ artar. Kalsitonin ve 1,25(OH)₂D₃'de artışlar maternal kalsiyumun fetusa transferinde ve annedeki kemik kaybının düzelmesinde önemli olabilir. Kalsitonin osteoklast aktivitesini azaltma üzerine akut etkiye sahiptir ve hiperkalsemi tedavisi için kullanılmıştır. Kemik kütlesi ve kemik oluşumunda artışlar yapabildiği gösterilmiştir.

Kalsitonin medüller tiroid kanseri (MTK) için önemli bir tümör belirteçidir. MTK tanısında prokalsitoninden de yararlanılabilir, ancak prokalsitoninin enfeksiyon durumlarında da artabileceği hatırlanmalıdır. Pentagastrin veya kalsiyum ile uyarılmış serum kalsitonin konsantrasyonlarının değerlendirilmesi, fazladan MTK tanısını önleyebilir. Ancak dinamik testlerin uygulanması zordur ve limit değerleri kesin olarak belli değildir. Bu nedenle genellikle bazal kalsitonin değerleri kullanılmaktadır.

Hâlen uygulanmakta olan kısa kalsiyum uyarı testinde ise bir gece önceden aç kalan hastadan bazal kalsitonin için kan alındıktan sonra, 10 mL'lik %10 kalsiyum glukonat içeren ampulden 0,2 mL/kg çekilerek 50 cc serum fizyolojikle dilüe edilir ve infüzyon yoluyla uygulanır. İnfüzyon bitimini takiben 2, 5, 7 ve 10. dakikalarda kan örnekleri alınır ve soğuk zincirde laboratuvara iletilir. Kadınlarda 120 pg/mL, erkeklerde 210 pg/mL üzeri kalsitonin değerleri anlamlı kabul edilir.

Diğer Testler

Pentagastrin ve kalsiyum stimülasyon testlerinin yanı sıra omeprazol testleri MTK tanısının uygunlukları açısından değerlendirilmiştir. Omeprazol, PG'den daha az potent ve daha az duyarlı bir kalsitonin sekretagogu gibi görünmektedir (73). Bununla birlikte, PG veya kalsiyum stimülasyon testlerinin kontrendike olması veya hasta tarafından reddedilmesi durumlarında işe yarayabilir. Bu testin kullanımı ve test sonuçlarının yorumlanmasında klinik deneyim yetersizdir (74,75).

Özet Olarak

Monomerlerden, dimerlerden ve agregatlardan oluşan kalsitonin immünoreaktivitesi heterojendir. Teşhis amaçlı güvenilir ve karşılaştırılabilir değerler elde etmek için kullanılan immünoassay sistemi tarafından bu husus net olarak ölçülebilir. Çeşitli değişkenlerin kalsitonin tayini üzerindeki etkisi unutulmamalıdır.

MTK şüpheli hastalarda artmış kalsitonin konsantrasyonları, iğne aspirasyon sitolojisinden daha yüksek bir tanı duyarlılığına sahiptir ve daha erken bir aşamada MTK tanısını sağlayabilir.

Prokalsitonin, MTK tanısı için ek bir biyobelirteç olarak kullanılacaksa, subklinik genel enfeksiyonlarda sıklıkla artan değerleri dikkate alınmalıdır; aksi takdirde MTK olduğundan daha fazla teşhis edilecektir.

Şu anda MTK tanı doğrulaması gereken durumlarda PG uyarı testi için herhangi bir alternatif yoktur. Ancak PG temininde sorunlar vardır ve bu test de rutin olarak uygulanmamaktadır. Fakat eğer bazal kalsitonin ölçüm tekniği yeterli seviyede duyarlı ise uyarı testine ihtiyaç kalmayacaktır.

Kaynaklar

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