



190.19 - Collagen Crosslinks, Any Method

Description

Collagen crosslinks, part of the matrix of bone upon which bone mineral is deposited, are biochemical markers the excretion of which provides a quantitative measurement of bone resorption. Elevated levels of urinary collagen crosslinks indicate elevated bone resorption. Elevated bone resorption contributes to age-related and postmenopausal loss of bone leading to osteoporosis and increased risk of fracture. The collagen crosslinks assay can be performed by immunoassay or by high performance liquid chromatography (HPLC). Collagen crosslink immunoassays measure the pyridinoline crosslinks and associated telopeptides in urine.

Bone is constantly undergoing a metabolic process called turnover or remodeling. This includes a degradation process, bone resorption, mediated by the action of osteoclasts, and a building process, bone formation, mediated by the action of osteoblasts. Remodeling is required for the maintenance and overall health of bone and is tightly coupled; that is, resorption and formation must be in balance. In abnormal states of bone remodeling, when resorption exceeds formation, it results in a net loss of bone. The measurement of specific, bone-derived resorption products provides analytical data about the rate of bone resorption.

Osteoporosis is a condition characterized by low bone mass and structural deterioration of bone tissue, leading to bone fragility and an increased susceptibility to fractures of the hip, spine, and wrist. The term primary osteoporosis is applied where the causal factor in the disease is menopause or aging. The term secondary osteoporosis is applied where the causal factor is something other than menopause or aging, such as long-term administration of glucocorticosteroids, endocrine-related disorders (other than loss of estrogen due to menopause), and certain bone diseases such as cancer of the bone.

With respect to quantifying bone resorption, collagen crosslink tests can provide adjunct diagnostic information in concert with bone mass measurements. Bone mass measurements and biochemical markers may have complementary roles to play in assessing effectiveness of osteoporosis treatment. Proper management of osteoporosis patients, who are on long-term therapeutic regimens, may include laboratory testing of biochemical markers of bone turnover, such as collagen crosslinks, that provide a profile of bone turnover responses within weeks of therapy. Changes in collagen crosslinks are determined following commencement of antiresorptive therapy. These can be measured over a shorter time interval when compared to bone mass density. If bone resorption is not elevated, repeat testing is not medically necessary.

HCPCS Codes (Alphanumeric, CPT® AMA)

Code	Description
82523	Collagen cross links, any method

ICD-9-CM Codes Covered by Medicare Program

The individual ICD-9-CM codes included in code ranges in the table below can be viewed on CMS' website under Downloads: Lab Code List. The link is: <http://www.cms.gov/Medicare/Coverage/CoverageGenInfo/LabNCDsICD9.html>



Code	Description
242.00-242.91	Thyrotoxicosis
245.2	Chronic lymphocytic thyroiditis (only if thyrotoxic)
246.9	Unspecified disorder of thyroid
252.00-252.02, 252.08	Hyperparathyroidism
256.2	Postablative ovarian failure
256.31-256.39	Other ovarian failure
256.8	Other ovarian dysfunction
256.9	Unspecified ovarian dysfunction
268.9	Unspecified vitamin D deficiency
269.3	Mineral deficiency, not elsewhere classified
627.0	Premenopausal menorrhagia
627.1	Postmenopausal bleeding
627.2	Symptomatic menopausal or female climacteric state
627.4	Symptomatic states associated with artificial menopause
627.8	Other specified menopausal and postmenopausal disorders
627.9	Unspecified menopausal & postmenopausal disorder
731.0	Osteitis deformans w/o mention of bone tumor (Paget's bone disease)
733.00-733.09	Osteoporosis
733.10-733.19	Pathological fracture
733.90	Disorder of bone and cartilage, unspecified
805.8	Fracture of vertebral column without mention of spiral cord injury, unspecified, closed
V58.65	Long-term (current) use of steroids
V58.69	Long-term (current) use of other medications

Indications

Generally speaking, collagen crosslink testing is useful mostly in “fast losers” of bone. The age when these bone markers can help direct therapy is often pre-Medicare. By the time a fast loser of bone reaches age 65, she will most likely have been stabilized by appropriate therapy or have lost so much bone mass that further testing is useless. Coverage for bone marker assays may be established, however, for younger Medicare beneficiaries and for those men and women who might become fast losers because of some other therapy such as glucocorticoids. Safeguards should be incorporated to prevent excessive use of tests in patients for whom they have no clinical relevance.

Collagen crosslinks testing is used to:

- Identify individuals with elevated bone resorption, who have osteoporosis in whom response to treatment is being monitored.
- Predict response (as assessed by bone mass measurements) to FDA approved antiresorptive therapy in postmenopausal women.



- Assess response to treatment of patients with osteoporosis, Paget's disease of the bone, or risk for osteoporosis where treatment may include FDA approved antiresorptive agents, anti-estrogens or selective estrogen receptor moderators.

Limitations

Because of significant specimen to specimen collagen crosslink physiologic variability (15-20%), current recommendations for appropriate utilization include: one or two base-line assays from specified urine collections on separate days; followed by a repeat assay about 3 months after starting anti-resorptive therapy; followed by a repeat assay in 12 months after the 3-month assay; and thereafter not more than annually, unless there is a change in therapy in which circumstance an additional test may be indicated 3 months after the initiation of new therapy.

Some collagen crosslink assays may not be appropriate for use in some disorders, according to FDA labeling restrictions.

ICD-9-CM Codes That Do Not Support Medical Necessity

Any ICD-9-CM code not listed in either of the ICD-9-CM covered or non-covered sections.

Sources of Information

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