Summary: Gamma Glutamyl Transferase (GGT)

NCD 190.32

The terms of Medicare National Coverage Determinations (NCDs) are binding on all fee-for-service (Part A/B) Medicare Administrative Contractors (MACs) and Medicare Advantage (MA) plans. NCDs are not binding, however, on Medicaid and other governmental payers, nor are they binding on commercial payers in their non-MA lines of business.

Item/Service Description*

Gamma Glutamyl Transferase (GGT) is an intracellular enzyme that appears in blood following leakage from cells. Renal tubules, liver, and pancreas contain high amounts, although the measurement of GGT in serum is almost always used for assessment of hepatobiliary function. Unlike other enzymes which are found in heart, skeletal muscle, and intestinal mucosa as well as liver, the appearance of an elevated level of GGT in serum is almost always the result of liver disease or injury. It is specifically useful to differentiate elevated alkaline phosphatase levels when the source of the alkaline phosphatase increase (bone, liver, or placenta) is unclear. The combination of high alkaline phosphatase and a normal GGT does not, however, rule out liver disease completely.

As well as being a very specific marker of hepatobiliary function, GGT is also a very sensitive marker for hepatocellular damage. Abnormal concentrations typically appear before elevations of other liver enzymes or bilirubin are evident. Obstruction of the biliary tract, viral infection (e.g., hepatitis, mononucleosis), metastatic cancer, exposure to hepatotoxins (e.g., organic solvents, drugs, alcohol), and use of drugs that induce microsomal enzymes in the liver (e.g., cimetidine, barbiturates, phenytoin, and carbamazepine) all can cause a moderate to marked increase in GGT serum concentration. In addition, some drugs can cause or exacerbate liver dysfunction (e.g., atorvastatin, troglitazone, and others as noted in FDA Contraindications and Warnings.)

GGT is useful for diagnosis of liver disease or injury, exclusion of hepatobiliary involvement related to other diseases, and patient management during the resolution of existing disease or following injury.

Indications and Coverage*

1. To provide information about known or suspected hepatobiliary disease, for example:
    a. Following chronic alcohol or drug ingestion.
    b. Following exposure to hepatotoxins.
    c. When using medication known to have a potential for causing liver toxicity (e.g., following the drug manufacturer's recommendations).
    d. Following infection (e.g., viral hepatitis and other specific infections such as amoebiasis, tuberculosis, psittacosis, and similar infections).
2. To assess liver injury/function following diagnosis of primary or secondary malignant neoplasms.
3. To assess liver injury/function in a wide variety of disorders and diseases known to cause liver involvement (e.g., diabetes mellitus, malnutrition, disorders of iron and mineral metabolism, sarcoidosis, amyloidosis, lupus, and hypertension).
4. To assess liver function related to gastrointestinal disease.
5. To assess liver function related to pancreatic disease.
6. To assess liver function in patients subsequent to liver transplantation.
7. To differentiate between the different sources of elevated alkaline phosphatase activity.

Limitations*

When used to assess liver dysfunction secondary to existing non-hepatobiliary disease with no change in signs, symptoms, or treatment, it is generally not necessary to repeat a GGT determination after a normal result has been obtained unless new indications are present.

If the GGT is the only "liver" enzyme abnormally high, it is generally not necessary to pursue further evaluation for liver disease for this specific indication.

When used to determine if other abnormal enzyme tests reflect liver abnormality rather than other tissue, it generally is not necessary to repeat a GGT more than one time per week.

Because of the extreme sensitivity of GGT as a marker for cytochrome oxidase induction or cell membrane permeability, it is generally not useful in monitoring patients with known liver disease.

*This language is a direct quote from the NCD.

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Representative List of Covered ICD-10-CM Diagnosis Codes

The following diagnosis codes are among those identified as "ICD-10-CM Codes Covered by Medicare Program" in the CMS "National Coverage Determinations (NCD) Coding Policy Manual and Change Report (ICD-10-CM)" section that identifies covered diagnosis codes for the above-described NCD.

ICD-10 Code	Description
A69.20	Lyme disease, unspecified
B18.1	Chronic viral hepatitis B without delta-agent
B18.2	Chronic viral hepatitis C
C61	Malignant neoplasm of prostate
E11.65	Type 2 diabetes mellitus with hyperglycemia
E11.9	Type 2 diabetes mellitus without complications
E21.3	Hyperparathyroidism, unspecified
E78.00	Pure hypercholesterolemia, unspecified
E78.1	Pure hyperglyceridemia
E78.2	Mixed hyperlipidemia
E78.49	Other hyperlipidemia
E78.5	Hyperlipidemia, unspecified
E78.9	Disorder of lipoprotein metabolism, unspecified
E83.10	Disorder of iron metabolism, unspecified
E83.19	Other disorders of iron metabolism
E83.40	Disorders of magnesium metabolism, unspecified
E83.42	Hypomagnesemia
E83.52	Hypercalcemia
K52.89	Other specified noninfective gastroenteritis and colitis
K73.0	Chronic persistent hepatitis, not elsewhere classified
K75.9	Inflammatory liver disease, unspecified
K76.0	Fatty (change of) liver, not elsewhere classified
K76.9	Liver disease, unspecified
K77	Liver disorders in diseases classified elsewhere
R74.0	Nonspecific elevation of levels of transaminase and lactic acid dehydrogenase [LDH]
R74.8	Abnormal levels of other serum enzymes
Z79.01	Long term (current) use of anticoagulants
Z79.891	Long term (current) use of opiate analgesic
Z79.899	Other long term (current) drug therapy

To view a full list of codes covered by Medicare and the complete NCD, please refer to the CMS website reference, www.cms.gov.

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