Medical Coverage Policy | Electrogastrography (EGG)

EFFECTIVE DATE: 04|01|2001
POLICY LAST UPDATED: 06|03|2014

OVERVIEW

Electrogastrography describes the recording and interpretation of electrical activity of the stomach.

PRIOR AUTHORIZATION

Not applicable.

POLICY STATEMENT

BlueCHiP for Medicare and Commercial

Electrogastrography is considered not medically necessary as there is insufficient peer-reviewed scientific literature that demonstrates that the procedure/service is effective.

MEDICAL CRITERIA

Not applicable.

BACKGROUND

The electrical activity of the stomach can be subdivided into two general categories: electrical control activity (ECA) and electrical response activity (ERA). ECA is characterized by regularly recurring electrical potentials, originating in the gastric pacemaker located in the corpus of the stomach and sweeping in an annular band with increasing velocity toward the pylorus. ECA is not associated with contractions of the stomach unless coupled with action potentials, referred to as ERA.

The usual practice is to record several cutaneous EGG signals from various standardized positions on the abdominal wall and to select the one with the highest amplitude for further analysis. Nonetheless, the recorded signal is relatively weak and difficult to distinguish from the surrounding background "noise" related to unwanted signals, such as cardiac, respiratory, duodenal, and colonic electrical activity. For this reason, direct visual analysis of the EGG signals is problematic. Various methods of filtering out background noise and automated analysis have been developed; running spectral analysis is most common. The EGG is usually evaluated in terms of changes in the EGG amplitude and frequency. Deviations from the normal frequency of 3 cycles per minute may be referred to as brady- or tachyarrhythmia.

The use of EGG has been most widely studied in patients with gastroparesis and functional dyspepsia. Gastroparesis is defined as a chronic disorder of gastric motility as evidenced by delayed gastric emptying of a solid meal. Symptoms include bloating, distention, nausea, and vomiting. When severe and chronic, gastroparesis can be associated with dehydration, poor nutritional status, and poor glycemic control in diabetics. While most commonly associated with diabetes, gastroparesis is also found in chronic pseudo-obstruction, connective tissue disorders, Parkinson disease, and psychological pathology. Functional dyspepsia is an enigmatic disorder characterized by persistent symptoms of abdominal discomfort with no identifiable etiology, including gastric emptying. In this setting, disorders in gastric motility may be considered. Treatment of gastric motility disorders typically includes the use of prokinetic agents, such as cisapride, domperidone, or metoclopramide.

Scintigraphic gastric emptying is considered the gold standard test for evaluating gastroparesis. The test consists of ingestion of a solid meal spiked with 99-technetium. Serial scintigraphic measurements are then

performed every 20 minutes for 2-3 hours after the meal. Delayed gastric emptying is diagnosed if more than 50% of the radiolabeled food is retained at the end of the study period. While gastric emptying evaluates the efficiency of gastric emptying, EGG focuses on the underlying myoelectrical activity.

EGG recording faces several technical challenges, many of them related to measuring cutaneous signals, rather than directly measuring electrical activity along the stomach mucosa or serosa. Several studies have compared EGG with gastric emptying tests and have reported a poor correlation between the two. There are inadequate data to determine how the results of this test may be used to benefit patient management. [1]

A position statement on the diagnosis and treatment of gastroparesis from the American Gastroenterological Association in 2004 reported that the guideline developers discussed, but did not recommend, the use of EGG to test for gastric myoelectrical activity. [2]

Validation of the clinical use of any diagnostic test focuses on 3 main principles: 1) the technical feasibility of the test; 2) basic statistical measurements, such as sensitivity, specificity, and positive and negative predictive values in different populations of patients and compared to the gold standard; and 3) how the results of the diagnostic test will be used in the management of the patient and whether or not the change in treatment will result in an overall improvement in health outcomes. Based on a review of the published peer-reviewed literature, there are inadequate data to evaluate any of the above principles, therefore Electrogastrography (EGG) is considered not medically necessary as there is no proven efficacy.

COVERAGE

Benefits may vary between groups/contracts. Please refer to the appropriate Evidence of Coverage or Subscriber Agreement for limitations of benefits/coverage when services are not medically necessary.

CODING

BlueCHiP for Medicare and Commercial

The following CPT codes are considered not medically necessary:

91132, 91133

RELATED POLICIES

Not applicable.

PUBLISHED

Provider Update	Aug 2014
Provider Update	Aug 2013
Provider Update	Jul 2012
Provider Update	Sep 2011
Provider Update	Sep 2010
Provider Update	Dec 2009
Policy Update	Feb 2008

REFERENCES

1. Verhagen MA, Van Schelven LJ, Samsom M et al. Pitfalls in the analysis of electrogastrographic recordings. Gastroenterology 1999; 117(2):453-60.
2. Bortolotti M. Electrogastrography: a seductive promise, only partially kept. Am J Gastroenterol 1998; 93(10):1791-4.
3. Koch KL, Medina M, Bingaman S et al. Gastric dysrhythmia and visceral sensations in patients with functional dyspepsia. Gastroenterology 1992; 102:A469.

4. Koch KL, Stern RM, Stewart WR et al. Gastric emptying and gastric myoelectrical activity in patients with diabetic gastroparesis: effect of long-term domperidone treatment. Am J Gastroenterol 1989; 84(9):1069-75.
5. Smout AJ, Jebbink HJ, Akkermans LM et al. Role of electrogastrography and gastric impedance measurements in evaluation of gastric emptying and motility. Dig Dis Sci 1994; 39(12 suppl):110S-113S.
6. Chen JD, Lin Z, Pan J et al. Abnormal gastric myoelectrical activity and delayed gastric emptying in patients with symptoms suggestive of gastroparesis. Dig Dis Sci 1996; 41(8):1538-45.
7. Parkman HP, Miller MA, Trate D et al. Electrogastrography and gastric emptying scintigraphy are complementary for assessment of dyspepsia. J Clin Gastroenterol 1997; 24(4):214-9.
8. Brzana RJ, Koch KL, Bingaman S. Gastric myoelectrical activity in patients with gastric outlet obstruction and idiopathic gastroparesis. Am J Gastroenterol 1998; 93(10):1803-9.

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