



Exploring the characteristics of electrogastrography in patients with chronic superficial gastritis by cluster analysis

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Abstract

AIM: Electrogastroenterography has been useful way to the study of gastroenteropathy, the aims are to explore the features of electrogastrograph (EGG) in patients with chronic superficial gastritis (CSG).

METHODS: Seventy patients with CSG diagnosed under endoscopy received EGG examination, 4 ways of EGG were collected for 400 s from the upper abdomen with 4 electrodes fixed respectively on the projective positions of the duodenal bulb the stomach body, the lesser and the greater curvatures and analyzed with computer for average amplitude and other 16 indexes. The systematic cluster analysis method was used in clustering indexes and Fishers cluster

analysis method were used in clustering EGG samples.

RESULTS: In index clustering, there were 9 groups with coefficient of correlation being 0.5. Four pairs of indexes with coefficient of correlation more than 0.8 were clustered, and 13 atypical indexes were available in each way of EGG. The differences of each index among 6 groups were all significant ($P < 0.01$) in analysis of variance. The results of q test showed that 61.51% of the differences of indexes between groups were significant ($P < 0.05$). The indexes, frequency spectra and waves of EGG in each group showed normal or nearly normal EGG. Low frequent waves were often seen.

CONCLUSIONS: (1) Cluster analysis is a useful method for exploring the characteristics of EGG. (2) The CSG patients had nearly normal EGG, with low frequency more common, while high frequency rare.

Key words: Electrogastrography; Cluster analysis; Chronic superficial gastritis

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