



## Clinical application of gastroesophageal pH and electrocardiograph monitoring synchronously

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### Abstract

**AIM:** Chest pain of esophageal origin is exactly like angina. According literatures, over half chest pain were caused by gastroesophageal reflux (GER). Most GER are acid reflux and some are alkaline reflux. It is difficult to diagnose alkaline reflux by esophageal single point pH monitoring only. Therefore, we applied esophageal and gastric two point pH monitoring as well as electrocardiograph record synchronously.

**METHODS:** pH sensor was made by antimony, and it was inserted through the nose. One pH sensor was positioned at 10 cm below the LES in the stomach and another pH sensor was positioned above the LES in the esophagus. Electrocardiograph recording using precordial

leads. pH data was collected 5 s record of electrocardiograph synchronously. Finally, all the results were analysed by computer automatically. Eight cases were monitored, in which seven cases have chest pain and one case without any symptom.

**RESULTS:** Two cases with chest pain were proved to be related to acid reflux, electrocardiogram monitoring test was positive in one of them, but no effect when treated with nitroglycerin and having good result treated with PPI drug. It was found that this case was acid reflux (+) and electrocardiograph was normal by monitoring synchronously. Another case with alkaline reflux, pH rised from 6.5 to 8 in the esophagus and from 2.5 to 8 in the stomach in the same time and lasted for 40 min.

**CONCLUSION:** Gastroesophageal pH and electrocardiograph monitoring synchronously can be used to distinguish chest pain of esophageal or cardia origin, and it also can be used to distinguish acid from alkaline reflux.

**Key words:** Gastroesophageal reflux; Electrocardiogram; Monitoring

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