

Reproducibility of EGG spectrum in healthy subjects

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Abstract

AIM: Although a great deal of clinical research has been done, limited data are available about the reproducibility of electrogastrography (EGG) and the recording times are also controversial. The aim of the study was to investigate the reproducibility of EGG spectrum in healthy subjects.

METHODS: Sixteen healthy subjects without, symptoms (4M, 12F, mean age 39 ± 18 years) were studied using 4-channel EGG recorder (WCDF-4B). No medication and alcohol had been taken 3 d before study. Four unipolar electrodes were positioned on the abdominal surface overlying fundus, gastric body, proximal and distal antrum. The corresponding positions were determined by X-ray films. The skin was carefully cleaned and prepared. After an overnight fast, EGG tracing was recorded for 1 h in the fasting and 1 h in the fed after ingestion of a standard test meal (400 Kcal.). The same examination was repeated 1 wk later. Frequency spectrum was used for analysis. Parameters were analyzed from different intervals, that is, every 13.33 min (D1), 26.66 min (D2), 53.32 min (D3) during fasting and

postprandial periods between the first and second EGG recording, including wave amplitude of EGG (AP), mean frequency (MF), central frequency (CF), dominant frequency (DF) and the percentage of arrhythmia.

RESULTS: (1) AP, MF, CF and DF were $150 \pm 16 \mu\text{V}$, 2.93 ± 0.09 cpm, 2.76 ± 0.06 cpm, 2.89 ± 0.09 cpm, at the proximal antrum during the first D1 interval, which were no difference between each D1 interval in the same recording or two recordings. (2) When compared data from D2 interval, AP (0%), MF (12.5%), CF (62.5%), DF (12.5%) showed significant difference between two EGG recordings. (3) AP (25%), MF (50%), CF (100%), DF (50%) showed significant difference between two EGG recordings when compared in D3 interval. (4) Total percentage of dysrhythmia (DF < 2.4 , > 3.7 cpm) was similar in either the first (8.75%) or second recording (16.75%, $P > 0.05$) during fasting, 5.3% and 8.0% after meal. (5) A meal significantly increased most parameters.

CONCLUSION: Our results indicated that the reproducibility of EGG spectrum is related to the time interval of EGG recording. The reproducibility decreases as the time interval increases. There is a significant difference between fast and fed states. This data suggests that EGG recording should include both fasting and fed states and prolonged EGG recording is unnecessary in fasting state.

Key words: Electrogastrogram; Reproducibility

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