

The benefit of Holter-ECG monitoring in the diagnosis of previous chest pain in elderly

¹ Munteanu D., ²Mihai B., Cernomaz A., ³ Postolache P., ⁴Perțea L.I., ⁵Vlase A.

University of Medicine and Pharmacy

“Gr. T. Popa” Iasi, Romania

Abstract. *The heart is an organ has a metabolism biotic, his capacity of acclimation hypoxia be extravagantly limited. From this viewpoint, can say that the myocardial ischemia, respectively the disturbances of rhythms, produced of an apparition unbalance between hematic flux coronaries and consumes myocardial of oxygen. This study was evaluated the different symptoms of cardiac or no cardiac causes of anterior chest pain at the elderly in terms of modern cardiac investigations.*

Keywords: *Holter-ECG monitoring, Chest pain, myocardial ischemia.*

I.Introduction

Chest pain, especially the previous one, is one of the most common symptoms, with multiple pathological significance, especially in people over 65 years, due to the variety of affections it involves. According to the International Association for the Study of Pain (IASP), the definition of pain has become more complete, encompassing cognitive, emotional and individual response specific to each individual. Acute pain is distinguished from chronic pain according to the parameters analyzed by the International Association for Pain Study (IASP): duration, etiology, mechanism, and psychological and social condition of the patient. The substrate of pain in somatic and visceral affection is the release of neuro-mediated and vasoactive double-acting substances that act either indirectly on the nociceptor membrane by local biochemical changes or directly by mechanical or chemical action. For these causes, the response of the pain is different for the patients, especially the elderly.

1. Methods

The patients were split in 3 classes:

- Class I: Patients with syncope in explicated and lipothymy.
- Class IIa and IIb: The patients with episodes of dyspnea have a pain in the thoracic, lassitude, frequently no reasons; Patients with episodes of fibrillation or paroxysmal flutter.
- Class III: Patients with symptoms like syncope lipothymy, his dizziness and palpitations (table).

Table The characteristics of patients

The study group	The control group
Male 71	58
Female 33	22
Average age 71.9	69.2
Glucose 105 mg/dl	90 mg/dl
LDL-cholesterol 171mg/dl	144 mg/dl
BP values 167/105 mmHg	145/95 mm Hg

The paraclinical investigations consisted of resting electrocardiogram, effort electrocardiogram and ECG Holter monitoring.

3. Results

A total of 184 patients were enrolled, and 2 were lost to follow-up, 1 in the Holter monitoring group and 1 in the control group. A total of 182 patients with data on both the 24-hour Holter monitoring were included in the final analysis. The median age for patients enrolled was 71.9 years (range, 54–94 years) at study group and 69.2 years (range, 48–80 years) in the witness group, and 70.3% of patients were male (table). The median wear time in days for the Holter monitoring was 1.0 (range, 0.9–1.0). Most patients over the age of 65 (73.9%) experienced electrocardiographic changes in rest and effort that statistically correlated with electrocardiographic disorders of Holter monitoring (figure).

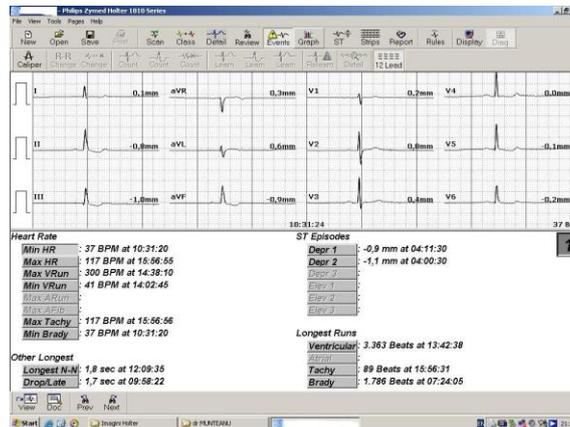


Figure Holter ECG monitoring patient, male, 72 years, syncope and chest pain (ischemic modifications - DIII, aVF, V5, V6)

4. Discussions and conclusions

The monitoring ECG Holter permits the identification disturbances of rhythms (24-48 of hours) at all the patients and realized a correlation between the modifications ischemic and the clinical symptoms (anterior pain chest, palpitations and dyspnea). The evidential therewith, variation circadian episodes of ischemia contributions of elemental the method represents it a specification an episodes of soundless ischemia, isolated to the perturbations of the heart rate. This correlation signifies the possibility of increasing the benefit of Holter ECG monitoring compared to resting electrocardiogram or other explorations.

5. References

1. Go A.S., Mozaffarian D., Roger V.L. et al. (2013), Executive summary: heart disease and stroke statistics–2013 update: a report from the American Heart Association., *Circulation*, 127, 143-152.
2. Rosenberg M.A., Samuel M., Thosani A., Zimetbaum PJ. (2013), Use of a noninvasive continuous monitoring device in the management of atrial fibrillation: a pilot study. *Pacing Clin Electrophysiol*, 36, 328-333.
3. Steinberg J.S., Varma N., Cygankiewicz I., Aziz P., Balsam P., Baranchuk A., Cantillon D.J., Dilaveris P., Dubner S.J., El-Sherif N. et al. (2017), 2017 ISHNE-HRS expert consensus statement on ambulatory ECG and external cardiac monitoring/telemetry, *Heart Rhythm*, 14, e55–e96.
4. Krahn A.D., Andrade J.G., Deyell M.W. (2013), Selecting appropriate diagnostic tools for evaluating the patient with syncope/collapse, *Prog. Cardiovasc. Dis.*, 55, 402-409.
5. Giada F, Bartoletti A (2015), Value of Ambulatory Electrocardiographic Monitoring in Syncope, *Cardiology clinics*, 33, 361-366.

6. Podrid PJ. (2018), Ambulatory ECG monitoring. In: UpToDate, Zimetbaum PJ (Ed), UpToDate, Waltham, MA, 35-41.
7. Derkac WM, Finkelmeier JR, Horgan DJ, Hutchinson MD. (2017), Diagnostic yield of asymptomatic arrhythmias detected by mobile cardiac outpatient telemetry and autotrigger looping event cardiac monitors, *J Cardiovasc Electrophysiol*, 28, 1475.
8. <https://www.heart.org/en/health-topics/heart-attack/diagnosing-a-heart-attack/holter-monitor#>. (Accessed September 2019).