

RHYTHM DISORDERS DURING COLONOSCOPY

Ivailo P. Vazharov¹, D. Jordanov².

1) Department of Gastroenterology; 2) Department of Cardiology;
Multiprofile Hospital for Active Treatment – Varna,
Military Medical Academy – Sofia, Bulgaria

ABSTRACT:

Purpose: The purpose of this study is to assess the risk of inducing rhythm disturbances of the heart during colonoscopy.

Patients and methods used: 80 patients had undergone colonoscopy performed by two experienced specialists of endoscopy for the period from March to December 2011. The endoscopies were performed without premedication and sedation. Holter was placed on each patient one hour before the endoscopic examination, and the record continued one hour after the manipulation. The blood pressure was measured before, during and after the procedure.

Results: During colonoscopy 25 patients (31,25%) manifested rhythm disorders. In 15 patients (18,75%) sinus tachycardia occurred. In 7 patients (8,75%) supraventricular extra systoles were observed and in 3 patients (3,75%) - ventricular extra systoles. No ST-T changes were found. Highest values of the blood pressure were measured before and during the endoscopy, but the values did not exceed 160/105 mmHg. In 10 patients (12,5%) a hypotensive reaction was observed, but the values were not lower than 80/ 50. In 2 patients there was a short bradycardia with a heart frequency 50-55 /min.

Conclusions: Our results showed that the rhythm disorders during lower colonoscopy occur in approximately 1/3 of the examined patients, there is an increase or decrease of the blood pressure in some patients, but that doesn't require physician's aid and the examination can be carried out safely without monitoring.

Key words: colonoscopy, rhythm disorders.

INTRODUCTION:

Colonoscopy was introduced in the clinical practice in 1960 and became "golden standard" in the diagnostics and therapy of the diseases of the large intestine.(1) According to the guideline of the American Society for Gastrointestinal endoscopy, colonoscopy is indicated for diagnostics and observation of a neoplasm of the large intestine, inexplicable anemia, rectal bleeding, suspicion of a process from irigography, chronic diarrhea, chronic inflammatory intestinal diseases.(2) Endoscopy of the

lower gastrointestinal tract is a procedure connected with an increase of the intraabdominal pressure as a result of insufflation of air. The heart function is affected as a reflex and by the catecholamines, secreted because of fear and pain.(3) Colonoscopy is a widely used procedure in Gastroenterology, but there aren't many studies of the occurrence of rhythm disorders during the examination.

PATIENTS AND METHODS USED:

80 patients - 49 men and 31 women had undergone colonoscopy by two experienced specialists of endoscopy for the period March - December 2011. The average age of the patients was 62 years, the minimum one was 40 years and the maximum - 75 years. The large intestine was cleaned with 2 sachets Endofalk diluted in 2 litres of water the day before the colonoscopy, without enema. Endoscopies were performed without premedication (spasmolytics or sedatives) and sedation, oxygen was given nasally during the examination. Anamnesis was taken with a special attention to the heart diseases, Ischemic disease of the heart and hypertonia, ECG was recorded before the examination. Holter was placed on each patient one hour before the endoscopic examination, and the record continued one hour after the manipulation. The Holter monitors were placed at the Department of Functional diagnostics of MHAT - Varna, and the records were deciphered by a specialist - cardiologist. The blood pressure and pulse were examined before, during and after the procedure by the nurse. The following definition of adverse reactions were used:

a/ sinus tachycardia - increased sinus frequency over 100/min.(4);

b/ sinus bradycardia - slowing down the heart frequency under 60/min. and regular rhythm(5,6);

c/ hypotensive reaction - situation in which the systolic blood pressure is lower than 100 mmHg and/or diastolic - lower than 50 mmHg.(7)

The examination was approved by the Ethical committee of MHAT - Varna, MMA and all the patients had signed an informed consent before the examination and the operation. All the procedures are in conformity with the requirements of the Good medical practice and ethical standards of the World medical association (Declaration

of Helsinki for the rights of the examined patients).

RESULTS:

5(3,75%) of the 80 colonoscopies performed were not complete. The reasons were presence of a tumor in 3 of the cases, not cleaned large intestine - one case and strong pain in one case.

The average values of the systolic pressure before, during the colonoscopy and after it were $125,5 \pm 25,5$; $130,7 \pm 25,3$; $115,2 \pm 20,8$ correspondingly; and diastolic blood pressure - $81,3 \pm 22,7$; $82,5 \pm 14,1$; $78,9 \pm 19,6$ correspondingly. The highest blood pressure was measured before and during the endoscopy, but the values did not exceed 160/105. In 10 patients (12,5%), 4 men and 6 women a hypotensive reaction was observed, but the values were not lower than 80/50.

25 patients (31,25%) manifested rhythm disorders during the colonoscopy. In 15 patients (18,75%) (6 men and 7 women) had sinus tachycardia during the examination. In 2 patients (2,5%) (one man and one woman) there was a short bradycardia, with heart frequency 50-55 /min. Supraventricular extrasystoles were observed in 7 patients (8,75%) (3 men and 4 women) and ventricular extrasystoles in 3 patients (3,75%) (one man and 2 women). No ST-T changes were detected. The rhythm disorders were observed more often in women (65% of the cases) and the patients with a history of cardiac disease of ischemic disease of the heart.

DISCUSSION:

Other examinations for evaluation of the diseases of the large intestine were introduced in the clinical practice such as virtual colonoscopy(8) and capsule endoscopy(9), which have better compliance of the

patients.(10) Second generation of capsule endoscopy was introduced with increased sensitivity of detection of colorectal polyposis.(11) Nevertheless biopsy can't be taken during both examinations or polypectomy can't be performed when needed (12), and the virtual colonoscopy involves irradiation.(13) Irigography also involves irradiation, but there are ECG changes in 46% of the patients during the procedure.(14)

In our study we found out that approximately 1/3 of the patients (31,25%) manifested rhythm disorders during the colonoscopy. Data from literature show between 17,6% and 72,2 % rhythm disorders provoked by lower endoscopy.(15) In accordance with previous studies we found that the risk of rhythm disorders is higher in patients with history of cardiac disease, ischemic disease of the heart and patients over 70 years old.(16) There were no data of myocardial ischemia provoked by our examination. This does not correspond to the study of Ristikankare et al. who inform about ST-T depression in 7% of the patients during colonoscopy.(17)

There was a hypotensive reaction in 10 patients (12,5%), 4 men and 6 women, but the values of the blood pressure were not lower than 80/50. There was a short bradycardia in 2 patients (2,5%) (one man and one woman), with heart frequency 50 - 55/min. These indicators fully correspond to the data of the literature.(18)

CONCLUSIONS:

Our results showed that the rhythm disorders during lower colonoscopy occur in approximately 1/3 of the examined patients, there is an increase or decrease of the blood pressure in some patients, but that doesn't require physician's aid and the examination can be carried out safely without monitoring.

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Corresponding author:

Ivailo P. Vazharov
Multiprofile Hospital for Active Treatment – Varna, Military Medical Academy,
84, Oditel str., Varna, Bulgaria
E-mail: vajarov@dir.bg