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ORIGINAL ARTICLE

ALIMENTATION HABITS OF PATIENTS WITH ISCHEMIC HEART DISEASE

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Abstract

The article familiarises the readers with the results of the research grant of the Faculty of Health and Social Studies of University of South Bohemia at České Budějovice. The goal of this grant was to map the issues of the life style of patients, incl. alimentation habits of patients suffering from ischemic heart disease. Patients from the Svaz postižených civilizačními chorobami (Association of persons affected by civilisation diseases) of the Region of South Bohemia were addressed (n = 170). Qualitative-quantitative research strategy was used for the research purpose, with the help of the technique of a semi-standardised interview and questionnaire technique. Semi-standardised interviews were implemented in cooperation with the clients of the cardio club at České Budějovice (n = 10). The questionnaire technique was used to map the area of alimentation and alimentation habits, observance of physical activity and the area of smoker's habits on a considerably big sample of patients suffering from ICHS (n = 170). The results show that those patients are informed on a healthy life style and that they observe the alimentation principles that should be good for their health.

Key words: *secondary prevention – ischemic heart disease – alimentation habits – patient*

INTRODUCTION

Nutrition and alimentation habits constitute a part of the life style of each of us. One of the goals of the long-term programme called Health 21 is to reduce the incidence from and mortality of cardiovascular diseases (Světová zdravotnická organizace 2003). So that this goal can be implemented, it is necessary to focus on public education offering the population of the Czech Republic possibilities to improve their life style (Zavázalová 2008). This action must logically concern also groups already affected by cardiovascular accident. Individual approach to the patient plays an extraordinarily important role in secondary prevention of the cardiac patient (Adámková 2003, Češka et al. 2005). Adequate motivation can help the patient acquire principles of regimen measures incl. correct alimentation. A complex change of life style brings not only change of alimentation habits but also change of philosophical life opinions with it (Češka et al. 2005). The right instruction and explanation of the principles of regimen measures constitute a part of thorough education. As Češka (2005) writes, "our patients are mostly instructed (according to their time possibilities) by their physician and they have no possibility to learn to know something about their disease and its treatment for example in a group" (Češka et al. 2005, p. 157).

"Healthy nutrition and the correct life style are included in basic preventive measures at present. Clinical-epidemiological studies have clearly

shown that the risk factors of heart and vessel diseases can be present in the early stages of the ontogenetic development already, as genetic factors act before birth already" (Mourek et al. 2007, p. 6).

Nutrition influences not only the development of cardiovascular diseases but also obesity. WHO informs in the report on the European statistics of cardiovascular diseases that the average fat intake in West European countries in general constitutes more than 35% of the total intake. The World Health Organisation also points out the differences between the Western and Eastern countries of the European Union (Food Information to Consumers – Commission Proposal 2008).

Nutrition has a high share in origin or delay of civilisation diseases. Atherosclerosis and its complications, obesity and its consequences are classically ranked among them. The statistics of foodstuffs sold per capita in the Czech Republic show that the food intake is almost by a half higher than it should be according to the principles of correct alimentation (Mourek et al. 2007).

The principles of healthy nutrition include particularly its regularity (at least 5× a day) and its moderation. The principle specifies that the food contains a corresponding quantity of liquids, proteins, saccharides, fats, minerals and vitamins (Müllerová 2003, Kunová 2005). "Nutrition participates, together with exercise and genetic dispositions, in the resulting nutrition status of the individual" (Müllerová 2003, p. 14).

Basic nutrients in food include proteins, lipids and saccharides. The recommended so called "energetic three-dimension" is used for those nutrients, i.e. fats, sugars and proteins should be contained in food in the following ratio: fats under 30% of total energetic intake, proteins 12–15% of total energetic intake and saccharides 55–65% of total energetic intake (Müllerová 2008).

The European Heart Network has set its most significant diet goals in order to reduce the incidence of cardiovascular diseases. Those goals concern a change in intake of saturated and unsaturated fats, intake of fruits and vegetables, salt and maintaining an appropriate BMI (under 25) (Food Information to Consumers – Commission Proposal 2008).

High intake of saturated and unsaturated fatty acids and an increased intake of cholesterol in food leads to the origination of cardiovascular diseases. That is why it is necessary to observe a fat intake under 30% of total energy, while the ratio of saturated fatty acids should not exceed 10% of the total intake and the intake of cholesterol should not exceed 300 mg a day (Müllerová 2003).

The research of nutrition and atherosclerosis is a part of a number of intervention studies, the results of which can be seen even in implementation of both the nutritional recommendations of the World Health Organisation and of the Nutritional recommendations for the Czech population issued by the Society for Nutrition in 2004. Specific recommendations can be found in Recommendations for prevention of cardiovascular diseases at adult age issued by the Czech cardiologic society. Those recommendations call for citizens to consume a varied and energetically balanced diet (Mourek et al. 2007, Prevence kardiovaskulárních onemocnění v dospělém věku 2009).

It is stated there that people of different groups should maintain adequate weight, which is given by a BMI under 25. This recommendation concerns the total energetic income and due physical strain. That is related with a recommendation of physical movement of at least 30 minutes a day in the form of quick walking or exercise. Food should be divided into 4–5 meals, according to experts. During the day, each person should eat at least 400 g fruits and vegetables (vegetables 2× as much as fruits). Fish is recommended at least 2× a week. Further recommendations concern fats, which play a significant role in cardiovascular prevention (see above) (Češka et al. 2005, DeFelice 2005).

Alcohol plays a role in the fight against atherosclerosis as well. Alcohol and the protective mechanism of its effect in prevention of atherosclerosis have not been completely cleared yet. It is unambiguously evidenced that moderate alcohol consumption has cardioprotective effects. Those effects are given by the regularity of alcohol consumption in a moderate quantity (1–2 decilitres of wine). Formerly it was believed that only some sorts of alcohol like red wine have a protective influence. Today the opinion prevails that

alcohol itself has a protective effect, regardless from whether it is beer or wine. Keil and his team dealt with the influence of alcohol consumption on coronary mortality in the Bavarian population. The conclusions stated that beer consumption has an influence on the reduction of total mortality by 40%. The same conclusions could be seen also from the data of MONICA in the Czech Republic; moderate alcohol consumption was related to a reduced incidence of non-fatal heart attack by 60% (Češka et al. 2005, Šimon et al. 2001).

The aim of the present study

The goal of the grant project consisted in mapping the situation in the area of observing the principles of a healthy life style of patients suffering from ischemic heart disease. The purpose lies in monitoring partial factors of life style, which can be influenced by the patient's/client's own behaviour. We focused on the issue of alimentation of patients with ischemic heart disease. More specifically on the regularity of food, on intake of some foodstuffs that should appear only moderately in the cardiac patient's diet. We evaluated also biochemical and anthropometric indicators as well as alcohol consumption for this area.

Hypotheses

We stated one hypothesis for the area of alimentation: *Patients suffering from ischemic disease eat according to the principles of healthy alimentation – it was confirmed.*

MATERIAL AND METHODS

The goal of the grant project consisted in mapping the situation in the area of observing the principles of a healthy life style in patients suffering from ischemic heart disease. A quantitative research strategy under use of the questionnaire method was used to meet this goal. The questionnaire was distributed to clients of the centres of the Association of persons affected by civilisation diseases in the Region of South Bohemia. A total number of 170 clients were addressed in this way. A total number of 120 questionnaires were used for research purposes.

The questionnaire consisted of 4 parts. The first part focused on identification data, health and disease, principles of a healthy life style. The second part consisted of questions on assessment of life quality; further, the area of smoking and the area of physical activity were mapped. The third part focused on the respondents' alimentation habits. The fourth part was focused on anthropometric data (height, weight, waistline, hipline), biochemical values (blood sugar level, cholesterol level) and blood pressure.

Biochemical values (blood sugar and cholesterol) were measured from capillary blood with the help of ACUTREND Chol/G device. Blood pressure was evaluated with the help of the Hartman device.

Descriptive methods (tables and diagrams) as well as analytical statistics were used for data processing. The selected data were processed with the help of contingency tables, and further it was tested with the help of the chi-quadrate test whether there are significant differences in the relevant tables. The statistic analyses were performed with the use of standard statistic methods with the help of SPPS version 15.0 software (statistical package for the social sciences).

Set

The set consisted of 55% (66) women and 45% (54) men. By age, mostly respondents in ages from 70–79 years (66%) were represented; further 23% in ages from 60–69 years, 8% in ages from 50–59 years and 3% in ages from 80–89 years. By education, respondents with secondary education prevailed (56%), followed by 33% trained respondents, 8% respondents with university education and 3% with elementary education. By social status, respondents from the group of widow/widower prevailed (57%). 24% live in marriage, 12% with a mate, 5% of respondents are divorced and 2% single. 49% (59) of respondents suffered a heart attack and 45% (54) of respondents suffer from angina pectoris; the category of other respondents (6%) includes clients suffering from hypertension or condition after stroke. In the characteristic of the set, statistics revealed a significant relationship between the disease and education; it was shown that trained persons and men suffered more frequently from condition after heart attack.

RESULTS

Table 1 Anthropometric and biochemical indicators

	N	%
BMI		
under 25	54	44
25–30	55	47
over 30	11	9
Chol		
under 5.2	62	52
over 5.2	58	48
Blood pressure		
under 140/90	46	38
over 140/90	74	62

Table 1 shows that 44% (54) of respondents had a BMI within the norm (under 25) at measuring. 47% (55) of respondents had a BMI in the range of 25–30, and 9% of respondents had a BMI over 30. Statistical analysis shows that women suffer more frequently from excessive weight in a range of 25–30, while men suffer more frequently from obesity over 30. Another indicator is the measured cholesterol value. 52% of patients had their total cholesterol value within the norm. 48% (58) of patients had the value over 5.2 mmol/l at the measuring. The blood pressure of 62% of patients was increased at the examination (over 140/90 mmHg).

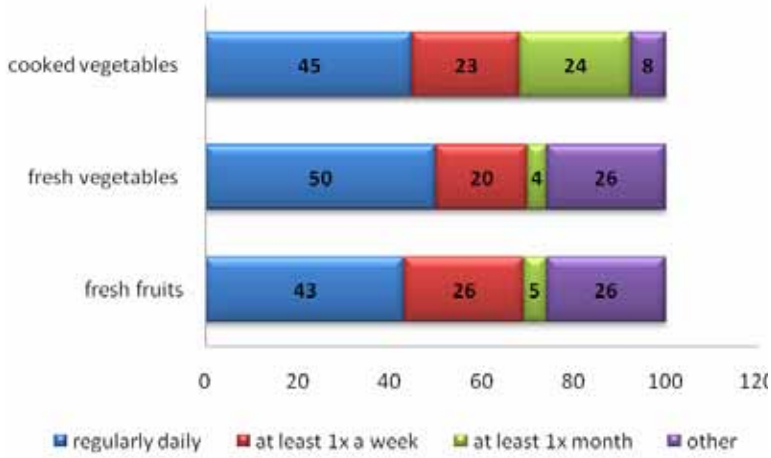

Diagram 1 Regular alimentation

The diagram analysis shows that most respondents have breakfast, lunch and dinner regularly. Only 22% of respondents have snacks regularly every day.

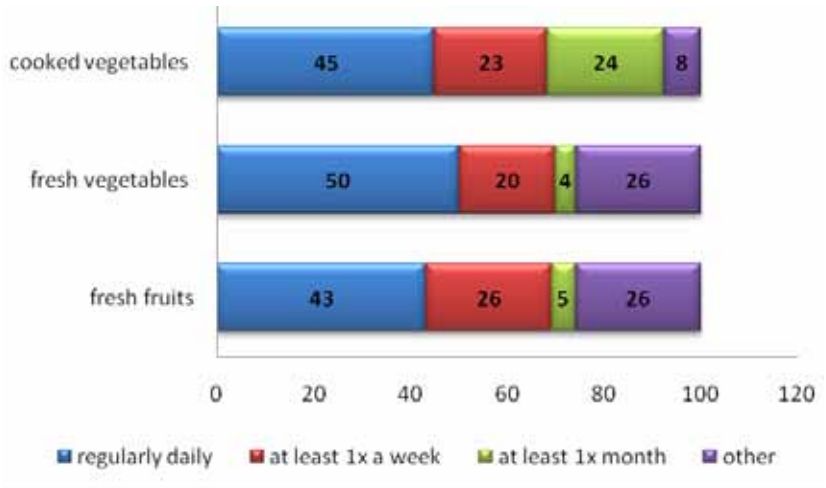

Diagram 2 Intake of fruits and vegetables

The diagram represents the intake of fruits and vegetables. The analysis shows that most patients have fruits and vegetables every day. 45% (54) of respondents eat cooked vegetables every day.

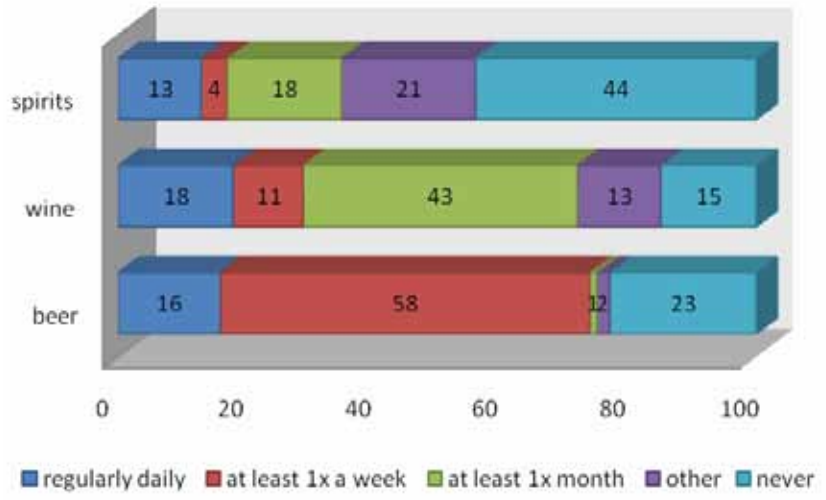

Diagram 3 Alcohol consumption

Diagram 3 represents the intake of alcoholic beverages. The analysis shows that 44% of respondents do not drink spirits. 58% of respondents drink beer at least once a week. 18% of respondents answered to drink wine regularly every day.

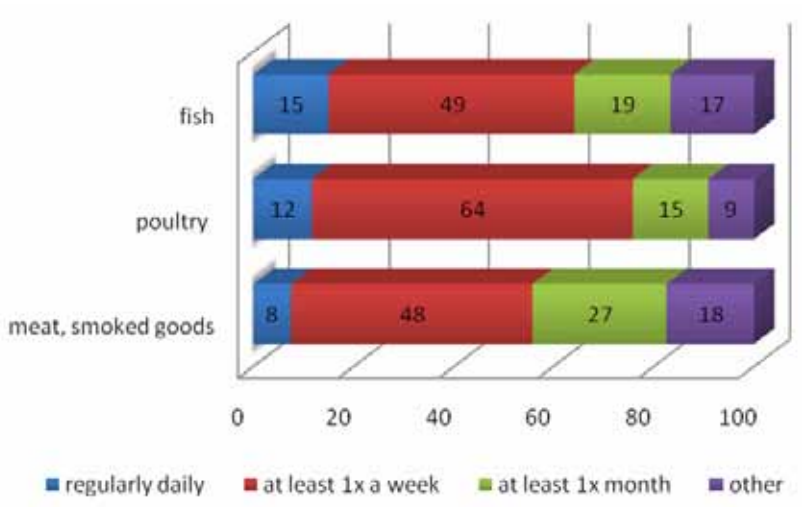

Diagram 4 Meat, smoked goods

Diagram 4 shows that 49% (59) of respondents eat fish at least once a week. 64% (77) of respondents stated they ate poultry at least once a week and 48% (58) of respondents eat meat and smoked goods at least once a week.

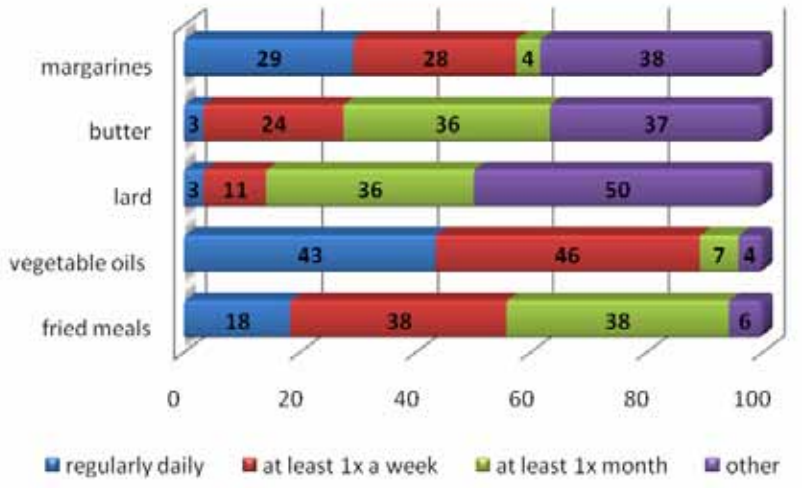

Diagram 5 Fats

Diagram 5 represents the intake of fats. 35 (29%) of respondents consume margarines every day. 3% (4) of respondents eat butter every day. 3% (4) of respondents consume lard every day. 43% (52) of respondents consume vegetable oils every day. 38% (45) of respondents eat fried meals at least once a week.

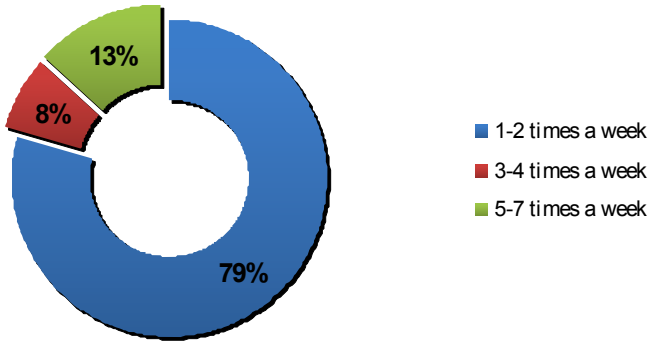

Diagram 6 Exercise

Diagram 4 shows that 79% of respondents participate in exercise for 30 minutes 1–2 a week; 8% of respondents participate in exercise for 30 minutes 3–4 times a week, and 13% of respondents participate in exercise for 30 minutes 5–7 times a week.

DISCUSSION

Hypothesis: Patients suffering from ischemic disease eat according to the principles of healthy alimentation – was not confirmed.

The principles of the right alimentation of patients with cardiovascular disease include particularly regular alimentation, and further selection of suitable foodstuffs with the desirable quantity of fats, sugars and proteins. The suitable composition of the diet with the corresponding physical strain appears as the resulting nutritional status of the individual (Müllerová 2003).

The question of regular alimentation is represented by Diagram 1. Its analysis shows that most respondents have their breakfast, lunch and dinner regularly. Regular meals constitute the basis of right alimentation. The interval between meals should not exceed 3 hours; therefore the diet should include also snacks. Another motive is the oscillation of blood sugar levels, which do not oscillate thanks to regular food intake (Kunová 2005).

Other items in the area of alimentation were focused on consumption of some foodstuffs. We focused on foodstuffs which are both desirable and undesirable from the point of view of alimentation of a cardiac patient.

High significance is attributed to fat intake in current preventive cardiology (Špinar and Vítovec et al. 2003). The question of fat intake was included in the questionnaire in several items. 35 (29%) of respondents stated to eat margarines regularly every day. 43% use vegetable oils regularly every day, and 18% of respondents consume fried meals regularly every day (Diagram 5). The recommendations of the Czech cardiologic society for the prevention of cardiovascular diseases at an adult age state that we should consume fats under 30% of our total energy (i.e. about 70 g per day in lightly working adults) (Prevence kardiovaskulárních onemocnění v dospělém věku 2009). We can find the same recommendation also in the "Alimentation recommendations for the Czech population". Healthy nutrition, and the offer of healthy nutrition constitutes the top interest of the European Union governments. The governments are called to support healthy alimentation of their population, both by offering them healthy foodstuffs and by changing culinary technologies. At present, nutrition and its principles come into the focus of experts in primary care and professional consulting (Zavázalová 2008). There are a number of special software applications allowing the processing of an individual's diet. They are used particularly in consultation of a healthy life style; they include e.g. NurtiDan (developed by doc. Müllerová under support of Danone company – Müllerová 2003) or

Nutrifia, developed by doc. MUDr. Jindřich Fiala.

The question of the consumption of meat, fish, poultry is represented in Diagram 4. The analysis shows that the respondents (49%) eat fish at least once a week. Another questionnaire question was intended to find out how many times a week the patients eat fish. Each adult should eat fish at least twice a week (Špinar and Vítovec et al. 2007). Consumption of fish in relationship to cardiovascular risk has become the target of a number of epidemiological studies. The results of the Dutch Kromhout's study showed a reduction of incidence of ischemic heart disease by 50% due to eating fish meat 3× a week. The effects of fish oil are put into connection with high contents of unsaturated fatty acids with long chain (Češka et al. 2005). The results show that most respondents eat fish only once a week. 77% respondents stated eating poultry at least once a week.

Another question maps the consumption of fruits and vegetables (Diagram 2). Its analysis shows that most respondents eat fresh vegetables and fresh fruits. Another questionnaire item was focused on the number of portions of fresh vegetables eaten during the day. Most respondents stated to eat only one portion of vegetables a day. Experts agree that if each individual of the European Union consumed 400 g (recommended dose) of fruits and vegetables a day, 50,000 deaths a year would be prevented. If the intake were higher (600 g), 135,000 deaths a year would be prevented (Food Information to Consumers – Commission Proposal 2008).

Alcohol beverage consumption is represented in Diagram 3. The results show that 58% of respondents drink beer at least once a week. 13% of respondents drink spirits and 18% of respondents drink wine every day. According to a number of epidemiological studies, light and medium alcohol consumers have a lower risk of cardiovascular diseases; that corresponds to 1–2 glasses of wine or 1–2 mugs of beer (Špinar and Vítovec et al. 2003, Sovová and Lukl 2005). That fact was evidenced by a published U.S.A. study covering 490,000 persons. The purpose was to monitor both favourable and adverse effects of alcohol on morbidity and mortality. The results showed a significantly higher total mortality for abstinents (Češka et al. 2005).

We can evaluate the nutrition status with the help of BMI [weight (kg): height (m2)] (Ingomar 2005). The determination of BMI was included in the examination of our patients with ischemic heart disease. The results show that 44% of the examined patients have a BMI under 25. 47% of respondents had their BMI in the range of 25–30 and 9% had a BMI over 30 (Table 1). Overweight and obesity can be prevented by eating suitable food and increasing exercise. Obesity is considered an independent risk factor of ischemic heart disease (1.3). "Weight reduction by 5–10% leads to a reduction of visceral fat by 30% with a significant drop of cardiovascular risk" (Češka et al. 2005, p. 159). It is recommended in this connection that each person maintains an adequate weight (BMI under 25); fats should not exceed 30% of total intake. People should educate themselves on the area of healthy alimentation; one of the forms is health education that can help people to decide about healthy or unhealthy foodstuffs (Food Information to Consumers – Commission Proposal 2008).

The questionnaire was focused also on evaluation of physical activity. Patients with cardiovascular disease should (according to their total condition) participate in physical activity for 30 minutes on most days of a week (Prevence kardiovaskulárních onemocnění v dospělém věku 2009). The analysis of the items concerning physical activities in the lives of cardiac patients shows that 79% of respondents have physical activity for 30 minutes a day 1–2 times a week (Diagram 4).

The analysis of further measured values shows that 52% of respondents had their cholesterol in the norm under 5.2 mmol/l. The analysis of values of measured blood pressure shows that most respondents had their blood pressure in values over 140/90 mmHg (Table 1). The compensation of values of cholesterol and pressure is very important for the cardiac patient because decompensation can lead to a higher probability of origination of a new cardiac accident (Špinar and Vítovec et al. 2007).

CONCLUSION

A complex change of life style brings not only change of alimentation habits but also the change of philosophical life opinions with it. Correct instruction and explanation of the principles of regimen measures constitute a part of a thorough education. As Češka writes, "our patients are mostly instructed (according to their time possibilities) by their physician and they have no possibility to learn to know something about their disease and its treatment for example in a group" (Češka et al. 2005, p. 157). Suitable motivation will help the patient to acquire the principles of regimen measures incl. correct alimentation.

The results of the grant project show that patients suffering from ischemic heart disease try to observe the recommended alimentation standards. In connection with the level of information and observance of principles, it is necessary to point out that the respondents of this research were patients associated in the Association of persons affected by civilisation diseases, i.e. patients who are interested in their health and healthy life style. It is necessary to go on supporting those organisations and to motivate other patients to become members of those organisations because health care in the primary and secondary sphere may be insufficient because of an increasing number of patients with ischemic heart disease. The initial results comparing this group of patients with the group of patients not visiting any organisation are surprising as well. It can be seen that patients reliant only on the advice of the outpatients' department physician observe the individual aspects of a healthy life style less. Those results can contribute to the support of self-helping groups of such patients.

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