THE IMPORTANCE OF NUTRITIONAL COUNSELLING AND DIETETIC PLANNING IN CHANGING PEOPLE'S LIFESTYLE AS PREVENTIVE FACTOR IN ATHEROGENIC DYSLIPIDEMIA

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Abstract

Nutritional counselling in setting up an individual diet plan to prevent the incidence of atherogenic dyslipidemias should be based on an investigative strategy and methodology specific to the various theoretical orientations that bear the implicit or explicit ideology within them.
The aim of this study was to highlight the impact and the role of diet in cardiovascular pathology, especially atherogenic dyslipidemias, and to teach the patient, through specific nutritional interventions, to adopt a healthy lifestyle correlated with the clinical diagnosis. The slight change in lifestyle associated with pharmacotherapy led to a better quality of life by improving the pathological status. Improving the health profile by establishing nutritional plans with a real beneficial impact on the dyslipidemic diseases and on the associated atherosclerotic pathologies as well as reducing the risks to life should be kept under control in the future through public policies and strategies that promote healthy nutrition.

Key words: healthy diet, atherogenic dyslipidemia, nutritional counselling

INTRODUCTION

In setting up a diet, a diet plan one should start from explaining and understanding the terminology "diet or personalized diet plan" that is closely related to the physiological and pathological status of the individual. Correct nutrition transposed into a nutritional plan is one of the main factors that determine the state of people's health. Rational nutrition is the nutrition that meets the needs of the human body, both in terms of quantity, through energy supply, and quality, through nutritional principles and biologically active substances.

A well-conceived diet should also take into account the particularities of the person concerned (habits, tastes, financial means etc.). Monotony is to be avoided, as much as possible. Consumers' preferences are to be met by offering a range of products that are safe for consumption. Many times the diet introduces a certain "simplification" of nutrition by choosing those ways of preparation that maintain the natural quality, as

much as possible, and allow the assessment of the effects of the diet on human health through the assessment of food imbalances.

To discuss a diet or to characterize a diet, it is necessary to describe the main factors that compose that diet, their role in the body and their metabolic interferences reported to the reference values for the human body.

In setting up the food regimes based on the data presented by the nutrition studies from the specialised literature, the anamnesis must include personal data records based on the interview, data on basal energy expenditure, energy expenditure necessary for professional and physical activities as well as the body mass index.

MATERIAL AND METHOD

The method of nutritional analysis applied in the studies on the importance of food planning required the use of anthropometric and complementary paraclinical methods as well. These methods assessed the body composition and investigated dietary habits, the quantity of the ingested food, food processing and meal frequency, aspects of what we call food diary. These methods made it possible to determine the nutritional composition of foods and to evaluate the beneficial effects of nutrition on coronary heart diseases.

The nutritional method includes the assessment of the nutritional intake, nutritional anamnesis, important in providing information on the existence or absence of risk factors involved in nutritional diseases.

The method of assessing the energy intake is one of the most important stages in achieving the balance of the nutrition diagnosis. It consists of *food surveys* that provide information on the nutritional consumption of an individual or of a group. The assessment of food intake is essential in determining food disorders and needs to be correlated with paraclinical analyses to establish a real nutritional plan that reduces health risks.

RESULTS AND DISCUSSION

The results of the nutritional anamnesis, the anthropometric examination and paraclinical parameters were obtained based on a retrospective study on the lifestyle and physiological state prior to the onset of the dyslipidemiant pathologies. The dietary history and the food frequency questionnaire completed by the prospective study on the analysis of the combined influence of scientific, ideological and economic causes led, through a predictive action aimed at a future analysis of the nutritional interferences, to important results on the impact of nutrition on improving the pathological status.

The description of the associated dyslipidemiant and atherosclerotic pathological phenomenon represented a purely descriptive research phase used to study the nutritional factor involved in the onset of the pathological phenomenon. The phenomenon was recorded by a collection of instantaneous prevalence data (study of the diagnosis of metabolic cardiovascular diseases and lifestyle prior to the implementation of an individual nutritional plan based on the pathological status).

The nutritional anamnesis in all 10 patients in the study (Table 1) shows an increasing trend in the frequency of nutritional components with dyslipidemic-atherosclerotic impact on the consumption of saturated fats, cholesterol and trans fatty acids (TFA) and on the consumption of refined carbohydrates and sugars. Stress and alcohol consumption are also risk factors.

Table 1

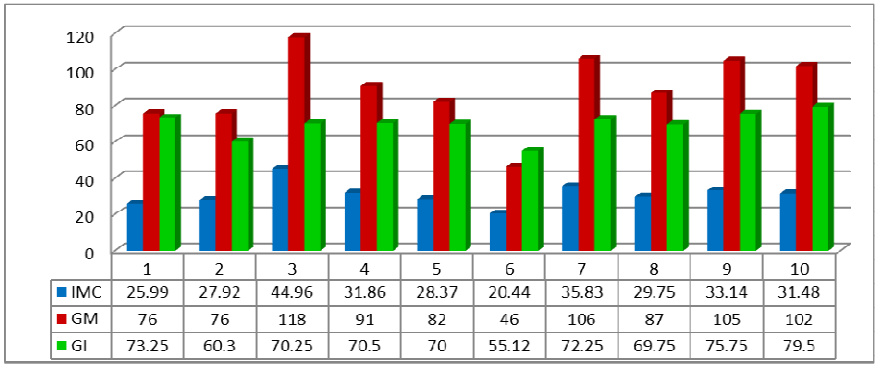
Evolution of cases according to nutritional anamnesis and food frequency prior to the onset of pathologies

Patient	The nutritional factor in the diet									Alcohol	Stress
	Proteins		Lipids				Carbohydrates				
	Animal proteins	Vegetal proteins	Saturated fats	Unsaturated fats	Cholest.erol	TFA	Refined carbo-hydrates	Unrefined carbo-hydrates	Sugars		
1	++	+++	++	+	++	+	++	+	++	++	+
2	++	++	++	++	+	+	++	+	+++	-	+
3	++	+++	++	++	++	+	++	+	+++	-	+
4	++	+	+++	+	++	++	++	-	++	+++	++
5	++	++	++	+	++	+	+	+	+	-	++
6	++	+++	+	++	+	+	+	++	+	-	+
7	++	+++	++	++	++	++	++	+	++	-	+
8	++	+++	++	++	+++	+	++	++	++	-	+
9	++	++	+++	+	++	++	++	+	++	+	++
10	++	++	++	++	++	+	+	++	+	++	++

Note: +++ very frequent (daily); ++ frequent (2-3 time /week); + less frequent (1 time/week) - indifferent (less than once a week)

Observational data supports the benefits of a nutritional plan that should primarily aim at correcting people's bad eating habits mainly due to a lack of information and awareness of the importance of healthy, rational nutrition. Commonly consumed foods are those considered to be risk factors in cardiometabolic pathologies.

BMI values and the values of the individual abdominal circumference showed that only 20% of the cases have a BMI that indicates normal weight. The analysis of the ideal weight (IW) reported to the measured weight (MW) (figure 1) and correlated with the body mass index (BMI) showed that 80% of the cases had a measured weight significantly higher than the ideal weight which leads to a positive energy balance that brings about weight gain.



	1	2	3	4	5	6	7	8	9	10
IMC	25.99	27.92	44.96	31.86	28.37	20.44	35.83	29.75	33.14	31.48
GM	76	76	118	91	82	46	106	87	105	102
GI	73.25	60.3	70.25	70.5	70	55.12	72.25	69.75	75.75	79.5

Fig. 1. Distribution of cases according to BMI, IW and MW, (kg)

BMI in nutrition studies is useful because in most cases it correlates well with the global excess fat and may indicate the presence of specific risks even at normal weights where it is necessary to use the anthropometric and complementary paraclinical methods based on which the positive diagnosis can be established, useful in setting up the nutritional plans that are faithfully correlated with it.

In 90% of the cases, the LDL-C level as positive risk factor in atherosclerotic pathologies (Table 2) shows significantly higher values than the reference values, a parameter that needs to be analysed for the implementation of the nutritional plans that bring about metabolic benefits and reduce the risk of coronary heart disease (CHD).

Table 2

Evolution of measured paraclinical parameters compared to the reference values from the beginning of the study

No.	Surname First name	Age	Sex	TC	Reference value TC	HDL-C	Reference value HDL-C	LDL-C	Reference value LDL-C	TG	Reference value TG
1	BR	47	M	185	200	38	40	143	100	46	150
2	BF	43	F	202	200	52	40	129	100	120	150
3	SM	65	F	193	200	78	40	87	100	142	150
4	DVL	55	M	272	200	56	40	138	100	408	150
5	DAI	45	M	235	200	40	40	158	100	98	150
6	BV	65	F	230	200	51	40	170	100	92	150
7	GS	43	M	261	200	45	40	198	100	161	150
8	VA	51	M	246	200	42	40	178	100	121	150
9	JD	40	M	218	200	30	40	128	100	157	150
10	DIL	48	M	220	200	43	40	143	100	171	150

Note: CT - Total cholesterol; TG – triglycerides

By comparing the measured values of TC, HDL-C, LDL-C, TG with the reference values, we notice significant differences between them, for each patient. This is useful information when setting up the individualized dietetic plan that will include necessary lifestyle

improvement measures, a major intervention process in order to improve the pathological status.

The assessment of the atherogenic index (Table 3) based on the formula A_tI = HDL-c**:**TC showed that 40% of the total subjects had an A_tI of less than 0.20.

Table 3

Atherogenic Index (A_tI) at the beginning of the study based on paraclinical parameters

No.	Surname First name	Age	Sex	TC	HDL-C	A_tI = HDL-c:TC	Reference value A_tI
1	BR	47	M	185	38	0.21	0.30
2	BF	43	F	202	52	0.26	
3	SM	65	F	193	78	0.40	
4	DVL	55	M	272	56	0.21	
5	DAI	45	M	235	40	0.17	
6	BV	65	F	230	51	0.22	
7	GS	43	M	261	45	0.17	
8	VA	51	M	246	42	0.17	
9	JD	40	M	218	30	0.14	
10	DIL	48	M	220	43	0.20	

Note: TC – total cholesterol; A_tI – atherogenic index

The atherogenic index (Mencinicopschi et al., 2010) is the ratio between high density lipoproteins (HDL-cholesterol) with cardioprotective effect ("good cholesterol") and total serum cholesterol (TC). The higher the index, the lower the risk of cardiovascular diseases, of atherogenesis and of haemorrhagic or ischaemic events (myocardial infarction, stroke). This indicator is important because protocols, respectively the specialized literature and clinical specialists, indicate that the evaluation of lipid fractions is important before the initiation of any hypercholesterolaemic therapy (Tirney et al., 2001).

The atherogenic index revealed that 80% of the cases presented a high atherogenic risk, identifying a close correlation with the positive diagnosis of the metabolic cardiovascular pathologies. These results point out the urgent need to identify food mistakes and to change dietary habits in order to set up nutritional plans that are specific to these disorders and that are ultimately meant to reduce the overall risk of the patient.

CONCLUSIONS

The observational study on the medical assessment that included the nutrition anamnesis, the clinical and anthropometric examination and the paraclinical investigations allowed a presumption of the implication of certain lifestyle and nutritional factors in the onset of the studied phenomenon.

Setting up a nutritional plan according to the nutritional value of food, both quantitatively, based on the portion size, and qualitatively, based

on the necessary amount of proteins, lipids, carbohydrates, minerals and vitamins is the main stage in the nutritional studies on the impact of food on the improvement of the pathological status.

In prescribing dietary regimes it is necessary to establish the energy demand, which was made in this study based on the ideal weight (IW), which led to the determination of the ideal energetic demand according to the activity coefficient.

Most patients developed dyslipidemia and associated atherosclerotic pathologies based on unbalanced diets correlated with lack of physical activity, in conclusion based on an unbalanced lifestyle.

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