Assessment of the influence of eating habits of patients diagnosed with cholelithiasis

(Ocena wpływu nawyków żywieniowych pacjentów z rozpoznaną kamicą żółciową)

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Abstract – Introduction. Cholelithiasis is the most frequent disease of the digestive system. Eating habits and lifestyle have a considerable influence on the occurrence of cholelithiasis. An integral part of cholelithiasis prevention is choosing a light diet which is low in fat.

Aim of the study. The objective of this study is to assess the influence of eating habits among patients with cholelithiasis on the development of this disease.

Materials and methods. The research tool applied was the author’s original questionnaire. The survey was conducted among patients at surgical and internal diseases wards. The study group consisted of 100 people.

Results. Patients claimed that they knew the rules of the right diet but most of the respondents did not adhere to them. Dietary factors and bad habits combined with incorrect lifestyle elements played a key role in the development of the disease among the patients surveyed.

Conclusions. Popularization of knowledge about the rules of proper nutrition and low-fat diet is one of the most effective methods of decreasing the number of cholelithiasis cases because many of them are caused by patients’ limited knowledge and may be the result of insufficient education in this field.

Key words – cholelithiasis, dietary habits, low-fat diet.


Material i metody. Do celów badawczych wykorzystano autorski kwestionariusz ankiety. Badania przeprowadzono wśród pacjentów przebywających na oddziałach chirurgicznym i wewnętrznnym. Grupa badawcza liczyła 100 osób.

Wyniki. Pacjenci twierdzili, że znają zasady prawidłowego odżywiania, jednak znaczna część ankietowanych tych zasad nie przestrzegała. Czynniki dietetyczne i złe nawyki żywieniowe połączone z nieprawidłowymi elementami stylu życia miały kluczową rolę w wystąpieniu u badanych kamicy żółciowej.

Wnioski. Propagowanie wiedzy na temat zasad prawidłowego żywienia i diety niskotłuszczowej jest jedną ze skutecznych metod zmniejszania zachorowań na kamicę żółciową, ponieważ wiele przypadków jest spowodowanych poprzez małą wiedzę pacjentów i może wynikać z braku edukacji na ten temat.

Słowa kluczowe – kamica żółciowa, nawyki żywieniowe, dieta niskotłuszczowa.

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I. INTRODUCTION

Cholelithiasis may be called a modern-age disease because it constitutes a major health problem in numerous countries, including Poland. It is the most frequent disease of the gallbladder. In recent years, the number of cholelithiasis cases has markedly increased and began to affect an ever-larger part of society in various ages. Currently, the incidence rate of this disease registered worldwide ranges from 10% to 20% of all diseases, and it is ca. 14% in Poland [1].

Mentions of this disease are found in the writings from 2nd century A.D. by ancient physician Saranus of Ephesus [1]. Also, gallstones were found in the mummy of a priestess who lived in the 11th century B.C. [2].

Cholelithiasis is a condition of the gallbladder and biliary tract in which deposits of varying structure are formed. The mechanism of gallstone formation is not fully known, although it is certain that ca. 10% of deposits are formed from bile pigment, cholesterol, bilirubin and calcium [3, 4]. Gallstones usually form in the gallbladder, but they also crystallise in the intrahepatic and extrahepatic ducts. Three gallstone types are distinguished according to their chemical composition: pigment, cholesterol, and mixed. The size of deposits may range from a grain of sand to a chicken egg. Sometimes the so-called biliary sludge occurs, mostly in the bile ducts and hepatic ducts [5].

In ca. 5% of patients, cholelithiasis is asymptomatic and it is detected by chance, e.g. during ultrasonography of the abdominal cavity. The presence of stones may not cause pain. Gallstones form very slowly – in 80% of patients, pain occurs when the deposit moves into the cystic duct or as a result of infection. In such cases, we speak of the so-called silent gallstones – these are usually large-sized single deposits and they may remain completely asymptomatic throughout the lifetime of an individual [6]. A major cholelithiasis symptom is a gallstone attack characterised by pain spreading to the right shoulder blade and breast. It is intense and sudden pain caused by increased pressure in the biliary tract or gallbladder as a result of a stone becoming lodged or a deposit moving through the bile duct. Gallstone attacks usually occur at night or in the early morning and they may be accompanied by nausea, vomiting, bloating, constipation, and pain in the right costal margin; the patient suffers and they are anxious [7].

Factors which may predispose to the crystallisation and formation of stones include especially: cholestasis, impaired emptying of the gallbladder, i.e. slow drainage of bile, and biliary tract infections. Environmental, genetic and dietary factors have an impact on the development of cholelithiasis as well as on the inflammation of the gallbladder and of the biliary tract. Dissection examinations over the last half a century have revealed an increasing predisposition towards developing cholelithiasis. Anatomopathological statistics demonstrate that currently cholelithiasis occurs three times more frequently, and therefore every 10th person has gallstones while 35% of the patients examined have a predisposition to the disease [8].

The mechanism of developing cholelithiasis is not fully known. Some authors believe that the following conditions have a major influence on the frequent occurrence of cholelithiasis: diabetes, obesity or hyperlipidaemia. Obese persons are much more often affected by the disease; however, under-eating and following a drastic diet may also lead to cholelithiasis. The direct cause of the formation of gallstones is the improper composition of bile. In normal conditions, bile is composed of cholesterol, bile acids and lecithin, all in certain proportions. Well-balanced proportions of these three ingredients render cholesterol completely soluble in bile. When the proportions of bile ingredients are disturbed, the process of crystallisation begins in which the crystals begin to form single or multiple deposits. They usually take shape in the gallbladder (cholelithiasis), but they may also form in the bile duct or move from the gallbladder into the bile duct (choledocholithiasis).

A higher risk of developing cholelithiasis is observed in persons who are over 20 years old and who suffer from diabetes. This is caused by a low concentration of bile acids in bile, a high concentration of cholesterol, and low gallbladder motility. The risk is also much higher for persons who have an increased concentration of insulin in blood plasma, but who do not suffer from diabetes [9]. The risk of developing cholelithiasis is increased in persons after vagotomy, in those who have been on parenteral nutrition for a long time, where the passage of food in the small intestine is extended, and in patients with cirrhosis. Cholelithiasis also affects persons with small intestine diseases and haemolytic diseases [8].

Genetic and ethnic factors and the resulting eating habits, i.e. the diet have a substantial influence on the development of bile tract diseases. Moreover, clinical observation points to gender as another factor shaping the likelihood of developing cholelithiasis. Numerous authors report that women are much more susceptible to cholelithiasis than men. This may be explained in terms of hormonal factors related to taking hormonal medicine and pregnancy history [5, 8].

The purpose of the study is to assess the influence of eating habits on the development of this disease in patients diagnosed with cholelithiasis.
II. MATERIAL AND METHODS

The diagnostic survey method was used in the study. The research tool used was the author’s original questionnaire. Participation in the study was anonymous and voluntary.

The respondents were hospitalised patients diagnosed with cholelithiasis. The study was conducted in the Independent Public Complex of Healthcare Facilities (SPZ ZOZ) in the District Hospital named after General Leopold Okulicki located in Pruszków at ul. Armii Krajowej 2/4. The respondents stayed in surgical and internal diseases wards between June and July 2011 due to diagnosed cholelithiasis. 100 patients took part in the study.

The majority of respondents were women (77%), and the remaining 23% were men.

The patients represented various age groups. The most numerous group of respondents were people between 40 and 50 years of age (33%). The least populous group were patients between 20 and 30 years old (12%). Respondents aged >60 constituted 21%, the age range from 50 to 60 accounted for 19% of the respondents, and finally people aged from 30 to 40 formed 15% of all respondents.

The respondents lived in urban areas (86%) or in the country (14%).

III. RESULTS

67% of the respondents stated that they knew the rules of a healthy diet, whereas 33% found that they did not have such knowledge. From the 67% of respondents who claimed to be familiar with the rules of healthy eating, 51% were female and 16% were male. The largest group (37%) claimed not to follow the rules of healthy eating. 36% replied that they abided by the rules, and the remaining 27% of respondents did not know.

The respondents were asked how long they had been suffering from cholelithiasis. 37% of answers confirmed a very short disease history between 0-1 year. 34% of patients admitted that they had been ill from 1 to 5 years, and 29% of patients claimed that they had been affected by the disease for over 5 years.

The respondents were asked about the frequency of eating pork. The majority (41%) of respondents selected the answer “almost every day”. The answer “rather seldom, 3-4 times a week” was selected by 20% of the respondents, “once a week” by 27% of the respondents, and “once a month” was selected by 10% of the patients surveyed. 2% of the respondents did not eat pork at all.

The respondents were also asked whether they followed a slimming diet. 5% of them admitted to following such diets from time to time. As many as 44% replied in the affirmative, but the largest group (51%) comprised persons who did not follow any slimming diets.

The group studied were presented several types of edible fats and they were requested to point the type which they used the most in their diet. The largest group (40%) selected butter, 29% canola oil, and 2% of respondents used olive oil. The remaining 17% selected margarine, whereas lard was consumed by 12% of the respondents.

The respondents were asked whether they believed that a healthy diet reduced the risk of developing cholelithiasis. Most respondents replied in the affirmative (64%), yet 36% believed that healthy eating did not contribute to a reduced risk of cholelithiasis.

The patients surveyed were asked if they were obese. 46% of respondents replied in the affirmative, 37% believed that they were not obese, and 21% of them could not judge objectively whether they were obese or not.

The respondents were asked about the frequency of eating fast food. Nearly half of them ate such meals often (48% of respondents), 32% of patients found that they ate such meals occasionally (32%). 20% of respondents did not eat fast food at all.

The respondents were asked whether they followed a low-fat diet. 26% admitted to following a low-fat diet, whereas 74% of the respondents had never followed such a diet. From the 26% of respondents who followed a low-fat diet, 20% were women and 6% were men.

The respondents were asked about the frequency of having cholesterol marked in their blood. Most of the respondents (46%) had never had the cholesterol level marked, 37% of the respondents had this parameter marked, whereas 17% claimed that they controlled the cholesterol level from time to time.

The respondents were asked about the usual manner of preparing the meat which they ate. More than a half (52%) selected the answer – fried, 35% of the respondents ate stewed meat, and 13% usually ate cooked meat.

The study group were asked whether they experienced pain after eating fatty and fried meals. 42% replied in the affirmative, the answer – “sometimes” was selected by 38% of the respondents, and barely 20% of the respondents did not experience any pain.

The respondents were asked about the frequency of eating sweets. The largest group of respondents (50%) replied that they ate sweets very often. 30% of persons surveyed consumed sugary foods almost every day, and 13% ate sweets occasionally. 7% of the respondent selected the answer which suggests a complete exclusion of sweets from their diet.
The group surveyed were asked about the frequency of their alcohol consumption. The largest group of respondents (48%) drank alcohol occasionally, whereas 9% confirmed drinking alcoholic beverages 1-2 times a week. 19% of the respondents selected the answer– 1-2 times a month, and finally 24% declared complete abstinence.

The respondents were also asked about the frequency of engaging in physical activity. The largest group of those surveyed (73%) had not engaged in any physical activity up to that time. 15% of the respondents stated that they took up physical activity from time to time, and 12% practised sport regularly.

The respondents were told about several manners of preparing meals so that they could select the manner which they used the most often when preparing meals for themselves and their families. The largest group of respondents (64%) selected the option – traditional cooking and frying, whereas 4% prepared meals in a pressure cooker. 5% of the respondents baked their meals in foil, and 21% selected meal preparation by stewing instead of frying.

The respondents were asked about the frequency of eating meals. 16% of the respondents ate 5 small meals a day, while 34% ate 3 substantial meals a day. 28% of the respondents ate 4 meals a day, and 22% ate 3 small meals daily.

IV. DISCUSSION

The analysis of survey results made it possible to assess the eating habits of patients diagnosed with cholelithiasis.

The majority of the respondents – mostly women – claimed that they knew the rules of a healthy diet (67%). Despite this, the patients surveyed often admitted to not following the recommendations associated with a healthy diet: 41% of the respondents ate pork almost every day, 40% usually used animal fats in their diet (butter), and 48% of the respondents admitted to eating fast food often. The majority of respondents had never followed a low-fat diet (74%). Half of the respondents admitted to eating sweets very often, almost every day. Such results seem to confirm the findings of the research conducted by the Polish Diabetes Association, which demonstrate that the Poles’ eating habits are incorrect, and the consumption of sugar and animal fat is excessive; in addition, the knowledge about rational eating is insufficient among the Polish people and it is often confused with under-eating [10].

Although most patients purported to know the rules of a healthy diet, they stated in further answers that they did not follow those rules (37%) or they did not know whether they followed those rules or not. Barely 36% of the respondents asserted that they followed the rules of a rational and healthy diet.

The right selection of food and diet constitutes an integral part of cholelithiasis prevention and treatment. Meals ought to be cooked, baked in foil and stewed, whereas fats should be served only in their raw form. Fruit and vegetables should only be cooked or consumed in the form of juice. The diet recommended in biliary tract diseases and cholelithiasis is aimed at a reduced consumption of fat both in terms of its quantity and quality. Even though fibre plays a vital role in the digestive process, its supply must be reduced as well. When preparing the menu, one must remember about carbohydrates which are to be provided in a supplementary amount. It is also necessary to avoid products which increase cholesterol production in the body [11]. The majority of the respondents prepared meals in a traditional manner by cooking and frying. A small group of respondents stated that instead of frying their meals, they steamed it, baked them in foil or used a pressure cooker.

The patients hospitalised due to cholelithiasis who were subjected to the study stated that they experienced health problems after consuming fat-rich fried meals either always (42%) or sometimes (38%). In spite of those problems, they usually ate fried meat and the health problems did not stimulate them to change their habits or to become more alert to their own health.

In cholelithiasis prevention, attention must be paid to eating habits which play a decisive role in shaping the patient’s health. Eating habits comprise meal variety, regularity and a lack of haste when eating meals, avoiding fatty meals, consuming fibre and avoiding salt [12]. The frequency and type of meals eaten are important factors in cholelithiasis prevention and treatment. The patients surveyed declared that their everyday diet consisted of 3 big meals (34%) or 4 meals (28%). Only a small group of respondents stated that their daily diet comprised 5 small meals.

Despite their general non-compliance with the rules of rational eating, the respondents predominantly believed that a healthy diet reduced the risk of developing cholelithiasis, thus evincing their awareness of the role which diet plays in prevention of the disease.

On numerous occasions, the respondents admitted to not cultivating healthy habits – not only in terms of eating. 73% of patients questioned declared that they did not engage in any form of physical activity, whereas 12% of respondents claimed to practise sport or engage in any type of physical activity regularly.

In literature on the subject, it is often emphasised that obesity constitutes a crucial risk factor for cholelithiasis [5, 8, 13]. Most of the respondents were obese (44%), and
20% did not know whether they were affected by obesity or not.

Most respondents did not have their blood cholesterol controlled (46%), but 36% did it regularly. 17% of the surveyed had their blood cholesterol level measured from time to time. Patients who controlled their cholesterol level were mostly women.

The analysis of study results demonstrated how many anomalies and errors there existed in the diet of patients treated for cholelithiasis. The number of those negative factors and their intensity allow us to conclude that dietary factors and bad eating habits combined with incorrect lifestyle elements played a key role in the development of cholelithiasis in those patients.

V. CONCLUSIONS

The eating habits of most respondents are incorrect in terms of both quality and quantity of meals consumed as well as in terms of meal preparation techniques.

1. In spite of not following a rational diet, the respondents showed awareness that their eating habits were conducive to cholelithiasis.

2. Dietary factors and bad eating habits as well as other lifestyle elements (lack of physical activity, overweight) played a key role in the development of cholelithiasis in the patients surveyed.

3. The promotion of knowledge about the rules of rational eating may be one effective method leading to the reduction in cholelithiasis cases since numerous cases of the disease may result from insufficient knowledge or lacking motivation.

VI. REFERENCES