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Anorexia Nervosa and Bulimia Nervosa – Aims and Tasks of the Therapeutic Team

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Abstract

Introduction and aim of the study: *The therapy of people with eating disorders should be multidirectional and include psychotherapy, treatment of somatic complications, nutritional treatment and sometimes pharmacotherapy. Therefore, the team of specialists conducting such therapy should include: psychotherapists, psychiatrists, internists, dieticians, nurses. The aim of this study is to present methods of treatment of eating disorders in an interdisciplinary perspective.*

Brief description of the state of knowledge: *Nutrition disorders are a diverse group of diseases, their treatment depends on the diagnosed disease entity. It is extremely important to quickly diagnose the disease, which allows for early introduction of therapy, and thus reduce the number of complications and their severity. Depending on the patient's condition, outpatient or hospital treatment may be advisable. The decision on the mode of treatment is made by the doctor on the basis of the medical history, test results, level of malnutrition and mental state. Also nutritional therapy is dependent on the kind of disease and the patient's condition. In people suffering from restrictive disorders, the main aim of nutritional therapy is to improve the nutritional status and normalize the patient's body weight. In the case of eating disorders with overeating, the main task of a nutritionist is to re-educate the patient in terms of recognizing physiological symptoms of hunger and satiety and to help in nutrition planning.*

Conclusions: *Due to the lack of clear causes of eating disorders, symptomatic treatment prevails, which should be based on constant contact with all members of the therapeutic team. Treatment is long and patients often interrupt the therapy to return to it after a while.*

Key words: *Eating disorders, anorexia nervosa, bulimia nervosa, therapy.*

Introduction

Due to multi-faceted somatic and psychopathological conditions of eating disorders, the treatment of patients should be multidirectional and take into account all health needs of the patient. Properly managed therapy should include nutritional treatment, treatment of somatic complications, psychotherapy and sometimes pharmacotherapy [1,2]. Moreover, constant supervision of an internist and specialist consultations, including cardiological, gynaecological, endocrinological, gastroenterological and other consultations, are necessary [3]. The permanent team of specialists treating eating disorders should include: internists, psychiatrists, dieticians, psychotherapists and nurses [2,3]. Such teams are standard in the countries of Western Europe and North America, unfortunately, they are still rare in Poland [3,4,5].

The whole treatment process is difficult, as in the absence of clear reasons for the disease, the therapy includes mainly symptomatic treatment, which requires constant contact with all members of the team specialists and appropriate reaction to the existing health situation [3]. The recovery time is long, patients often discontinue the therapy and return to improper dietary behavior and compensation methods [1,3,6]. As a result, one patient even starts the therapy several times before it is successfully completed.

The aim of this study is to review the literature in the aspect of eating disorders, with particular emphasis on the interdisciplinary aspect of eating disorders and to present the tasks of the therapeutic team.

Eating disorders treatment standards

In the treatment of eating disorders, the standards developed by specialists from Europe and the United States of America are used [7]. The best known guidelines include the standards developed by the American Psychiatric Association (APA) and under the leadership of the National Institute of Health and Clinical Excellence (NICE) – standards of nutritional

treatment and therapy, and the Management of Really Sick Patients with Anorexia Nervosa (MARSIPAN) – standards of comprehensive care [7,8].

The therapy of eating disorders depends on the diagnosed type of disease. In the case of anorexia nervosa, immediate hospital treatment is often necessary. This is due to the late arrival for help when serious somatic disorders occur, such as: arrhythmia, electrolyte disturbances, dehydration, severe malnutrition. Those may be associated with direct life-threatening events [9,10]. Patients mask the occurrence of symptoms by wearing larger clothes, providing food alone, willing to engage in preparing meals for the family [10].

The main therapeutic goals of anorexia nervosa include [3,9,10,11]:

1. restoration of proper body weight appropriate for age, height and gender;
2. treatment of somatic complications resulting from long-term malnutrition;
3. psychiatric treatment (mainly includes psychiatric supervision and introduction of pharmacotherapy);
4. psychotherapy (an attempt to eliminate untrue images, cognitive disorders and to regulate relationships with other people);
5. restoration of proper eating habits and stopping the use of food restrictions.

In the case of bulimia nervosa, an additional goal is to limit the use of compensatory methods in the initial period of treatment and to stop them completely with the therapeutic progress [12].

Medical and dental assistance

The research shows that people suffering from eating disorders during the first period of disease most often seek help from a dietician, general practitioner or internist, whereas they rarely contact a psychologist and psychiatrist [13]. In smaller towns or rural areas, access to dietary, psychological and psychiatric consultations is very difficult; therefore, the responsibility for the diagnosis of these disorders lies exclusively with

the general practitioner, who should pay attention to the following behaviors and symptoms characteristic for people with anorexia and bulimia (Table 1).

Table 1. Behavior and symptoms characteristic for patients with anorexia nervosa and bulimia nervosa [3,4,6]

Anorexia nervosa	Bulimia nervosa
• excessive concentration on the body's appearance and its dimensions; • weight loss; • interest in restrictive diets; • increased physical activity (e.g. increase in the frequency of workouts, abandonment of public transport in favour of walking); • disturbed image of own body (hyperbolization); • anxiety of weight gain; • provoking vomiting, using laxatives and diuretics; • aversion to undressing for examination; • excessive focus on the energy value of meals; • menstrual disorders; • occurrence of lanugo – usually at BMI<16 kg/m^2; • hair loss, nail cracking, dry skin; • cold intolerance; • significant increase in total cholesterol (even up to 300 mg/dl).	• excessive concentration on the body's appearance and dimensions; • great interest in food and cooking; • excessive focus on food; • increased physical activity (e.g. exhausting workouts to burn the energy supplied with the food consumed); • provoking vomiting, using laxatives and diuretics; • fear of weight gain; • swelling of the salivary glands (so-called hamster face); • feeling of losing control over food; • eating as a method of coping with stress.

In the early stages of the disease, the main task of doctors is the early diagnosis of the symptoms of eating disorders, which enables a quick diagnosis to be made and start appropriate treatment [14]. This reduces the number of complications and their severity and improves the therapeutic prognosis [14]. During the diagnostic process, the physician should gently make the patient aware of the health consequences of these disorders and mortality resulting from the complications [14]. Depending on the severity of disease, the physician decides on the mode of treatment of patients. In cases of eating disorders, outpatient or hospital treatment is

possible [12]. The indication for hospitalization is a decrease in patient's body weight below 75% of the due body weight; moreover, hospital treatment, even without the patient's consent, can be provided when:

- the patient's BMI is <15 kg/m^2 or there is a decrease in body weight by more than 25% of the due body weight;
- there are cardiovascular symptoms: systolic pressure <90 mm Hg; heart rate <50/min by day and/or <40/min by night; orthostatic heart rate changes: increase of >20 beats/min or decrease of pressure of >10 mm Hg;
- electrolyte disturbances (especially hypokalaemia);
- suicidal thoughts or self-destructive behaviour occur [15,16].

The outpatient mode is mainly intended for patients whose state is not life-threatening due to severe malnutrition, electrolyte disturbances and dehydration [4,10,12]. The clinical experience shows that during outpatient treatment, the normalization of body mass and somatic status is much slower than in hospitalisation. However, it is parallel to changes in the mental sphere [12]. On the other hand, failure to institute hospital treatment in patients with low BMI values results in prolongation of the time during which the patient's body is burdened with too low body mass and too low weight gain during a given period of time [12].

Pharmacotherapy

Pharmacotherapy of eating disorders is a problematic concept since so far no substance has been registered that would be fully effective in treating them [10,12,17,18]. In such disorders, different groups of drugs are used, depending on symptoms. In the pharmacological treatment of anorexia nervosa, antidepressants are used: selective serotonin reuptake inhibitors (SSRI) and selective serotonin norepinephrine reuptake inhibitors (SNRI), as well as anti-anxiety and antipsychotic drugs [17,19]. In the treatment of bulimia nervosa, SSRI, SNRI and anticonvulsants (e.g. topiramate) are used [18,19]. There is also a group of drugs whose use in the treatment of eating disorders is questionable due to the occurrence of side effects

and numerous contraindications for their use. Among them is bupropion. It is a selective neuronal norepinephrine and dopamine reuptake inhibitor, which is used mainly in the treatment of nicotine addiction and severe episodes of depression [18]. In addition, scientific studies have shown the efficacy of this drug in the treatment of bulimia nervosa; however, its use may cause gastrointestinal disorders and induce convulsions, which completely disqualifies its application in epilepsy patients [20]. Moreover, the use of bupropion in children and adolescents below 18 years of age is not recommended due to its unproven clinical efficacy and unknown safety in this age group. Moreover, bupropion shows low addictive potential [21]. Moreover, the treatment of eating disorders that were not defined otherwise remains a major problem. Similarly to anorexia and bulimia, symptomatic treatment dependent on the patient's condition is applied [22]. In this group of diseases, SSRI, anticonvulsants, and SNRI are used [17,20].

Pharmacotherapy also involves the selection of other drugs appropriate to the patient's physical condition. In certain cases, drugs affecting the cardiovascular system, nervous system, endocrine and digestive systems need to be used [3,10,12]. Their application should be preceded by physical examination of a patient and analysis of laboratory tests [3].

Dentists play an important role, particularly in the diagnosis of eating disorders. Many patients suffering from these diseases have problems related to their dentition, periodontium and oral cavity [2]. The majority of patients who seek help from a dentist do not inform them about nutritional problems, so it is important that dentists, in addition to providing appropriate dental procedures, also carry out an interview in which they exclude the cause of oral diseases resulting from eating disorders [2]. The symptoms that the dentist should pay attention to include the so-called "hamster's face" (enlargement of salivary glands caused by vomiting), loss of hard dental tissue of non-carious origin, increased sensitivity of teeth to mechanical and thermal stimuli, sores and erosions occurring in the oral cavity and oesophagus, xerostomia, inflammation of the tongue and corners of the mouth, damage to the oral mucosa and discoloration of teeth [23,24].

Psychotherapeutic assistance

There are many models of psychotherapeutic treatment of patients with eating disorders [7,8,22]. NICE considers cognitive-behavioral psychotherapy, cognitive-analytical psychotherapy and interpersonal psychotherapy to be the most effective among adults (effectiveness confirmed by scientific studies) [7,22]. Similar models of psychotherapy are recommended by APA (family psychotherapy, cognitive-behavioral psychotherapy, interpersonal psychotherapy and psychodynamic psychotherapy) [7]. All institutions have recognized that the best therapeutic effects in children and adolescents are achieved by family psychotherapy (systemic work) [7,25,26]. The most important characteristics of each of the mentioned psychotherapeutic models are presented below (Table 2).

The basis of each model of psychotherapy is to establish an appropriate relationship between the patient and the therapist [22]. This relationship allows for honest discussion of all aspects of patient's life, which are related to the disease or which should be worked out with the psychotherapist for another important reason [22,25,26].

The review of scientific literature suggests that in the acute phase of the disease (severe symptoms and cachexia), relationship-based therapy is the most effective (usually psychodynamic psychotherapy) [5]. In later stages of treatment, after weight gain, cognitive behavioral therapy (CBT) is recommended [5,22,26]. There are concerns that in case of significant emaciation (early stage of therapy), the cognitive functioning of patients does not allow for full involvement in the treatment process, thus the effectiveness of cognitive-behavioral psychotherapy at this time is low [5]. However, the American Psychiatric Association recognizes that CBT is an effective form of help after a specific weight gain and preventing relapse [5,7,22].

Table 2. Brief characteristics of psychotherapeutic models used in the treatment of eating disorders [7,9,22,25,27,28,29]

Models of psychotherapy	Characteristics
C-behavioral psychotherapy	It is based on the assumption that the disturbed behavior is derived from repeated, learned responses to stimuli. The aim of the therapy is to change the way of thinking and develop new behaviors (correcting existing ones). During the therapy the patient acquires skills and learns to solve problems in a new way. The therapist plays an active role.
Cognitive-analytical psychotherapy	The therapy is based on finding negative, inappropriate thought patterns and analysing past events. Its aim is to identify and change undesirable behaviors to those that will enable proper functioning. It consists of 3 stages: reformulation (behavior analysis), identification (the influence of these behaviors on the development of the disorder) and revision (identification of changes).
Interpersonal psychotherapy	Based on the assumption that relationships with other people are connected with the symptoms. The main aim of the therapy is to reduce symptoms by improving interpersonal interaction. During therapy, interactions that precede, sustain or result from the disorder are discussed. During therapy, the patient learns how to deal with emotions and how to react to emerging relationship difficulties.
Psychodynamic psychotherapy	Based on psychoanalysis and the theory that disorders are associated with childhood and unresolved conflicts from the past. It assumes that human behavior comes from unconscious, internal mechanisms. During therapy, the psychotherapist analyses unconscious impulses and hidden needs.
Family (systemic) psychotherapy	Therapy involving the system – a group of people (usually family, marriage). Its aim is to improve relations between the members of the group participating in the therapy, to correct communication and to introduce the rules of the group that will improve its functioning.

Gestalt	Therapy based on the conviction of complex human structure. Its aim is to show how to solve emerging problems based on one's own abilities and competences. During the therapy the patient learns stereotypes about himself/herself (gets rid of them), his/her limitations and hidden potential.
Process-oriented psychotherapy	During the therapy the experiences described by the patient are analysed. The therapist's task is to notice the potential for change in the described experiences and make the change visible to the patient as well.
Expressive psychotherapy	Therapy that involves creative processes (drama, movement, music, writing) in reaching internal experiences and resources and making them visible as an act of art. It assumes that art allows to get rid of negative feelings and emotions in an indirect way. A given work is not subject to qualitative evaluation, but serves as an expression of emotions. Often used as an additional but not the only therapeutic form. Its classification as a form of psychotherapy is debatable, some societies classify it as a form of occupational therapy.

Regardless of the selected therapeutic model, psychotherapy is a long-term form of help [5,7,22,26]. Depending on the patient's condition and severity of the disease, psychotherapy of eating disorders may last 4-5 months, and sometimes even about a year or more [5]. The duration of therapy and the rules of psychotherapeutic treatment should be written in a special therapeutic contract, which must be accepted by both parties involved in the therapy [22,26].

In selected cases, it is necessary to include family members in the therapy [25]. This process mainly concerns children and adolescents, whose functioning within the basic social unit, which is the family, remains impaired [25]. During the therapy, events important for the family and feelings related to them are discussed. The therapist should discuss the issues of conflict within the family in a neutral way and help to develop solutions that meet the expectations of all family members [27].

Many health centres also use other forms of therapy. Among them, expressive therapies are widely used, such as psychodrama, art therapy or dance therapy [28,29,30]. The Gestalt therapy is also becoming more and more popular [31]. It is based on the assumption that eating in the patient's family was an important means of communication replacing other forms of expressing feelings, e.g. hugging, praising, complementing [31,32]. The lack of appropriate emotional patterns led to incompetent recognition and presentation of own feelings and emotions; therefore, the patient tries to express them by means of eating disorders [33].

Regardless of the selected therapeutic model, it is important that the therapy should be carried out by a qualified psychotherapist [5,22,27,29,31]. Permanent removal of symptoms of the disease is very difficult but achievable with properly conducted treatment [5,7,33].

Nutrition intervention

Nutrition therapy is also considered an important component of the treatment of eating disorders, which is included in international standards of conduct developed by various institutions, including APA, NICE and MARSIPAN [8,20].

Nutritional interventions are dependent on the existing disease. In the case of restrictive eating disorders, such as anorexia or pregorexia, the main task of a dietician is to support nutrition, the aim of which is to improve the state of nutrition and normalize body weight [4]. In eating disorders of the overeating type, a dietician should first of all teach the patient to recognize physiological symptoms of hunger and satiety and provide support in nutrition planning [34] (Figure 1).

The dietician bases his actions on two essential elements – the assessment of the nutritional status and the evaluation of the current diet [4,35]. It is necessary to prepare an individual diet adjusted to the current state of health, energy, protein, carbohydrates, fats, vitamins and minerals [4,6,10].

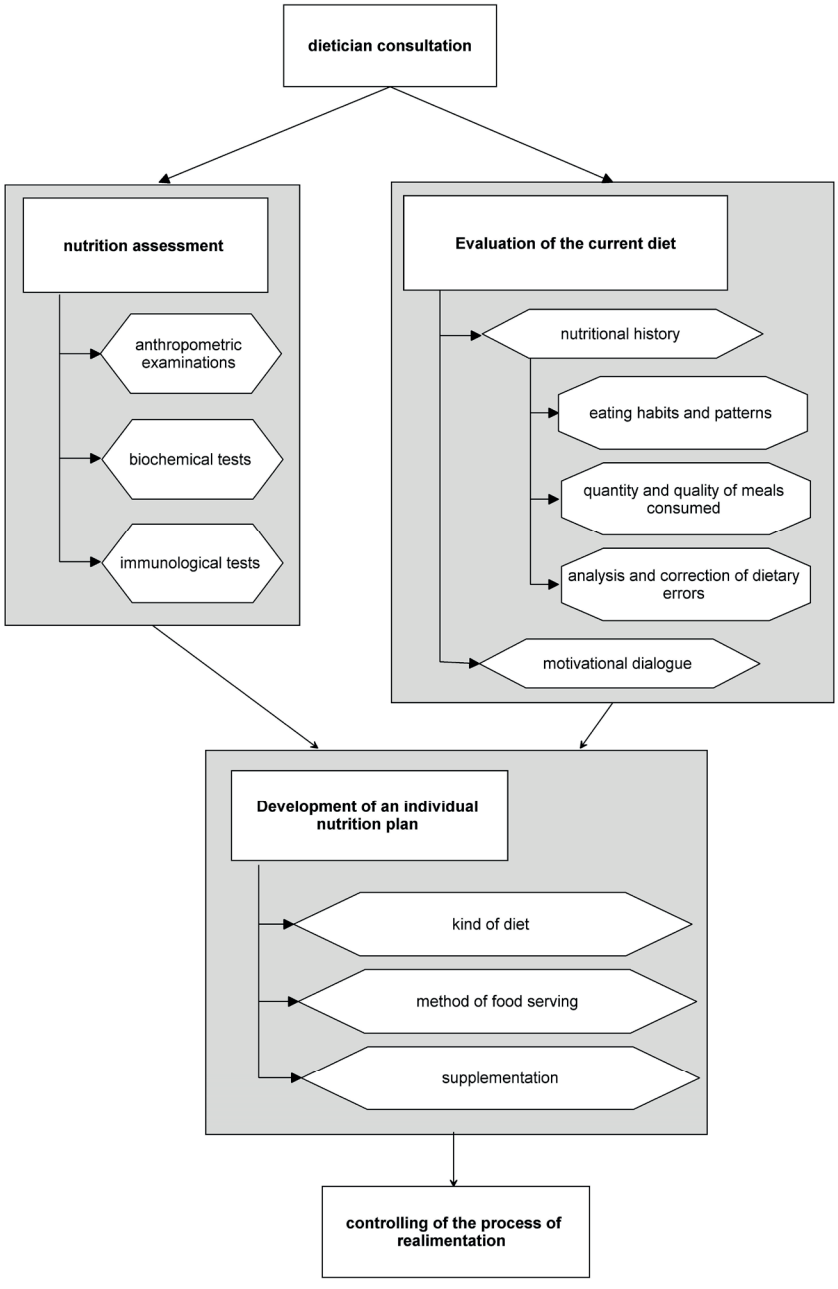

Figure 1. Nutritional interventions in restrictive eating disorders and overeating eating disorders

The evaluation of nutritional status should take into account [3,4,6,10]:

1. anthropometric tests, including: body weight, BMI, measurement of the thickness of dermal-fat folds on the arm, over the biceps and triceps muscles as well as measurement of the middle circumference of the arm [3]. At present, it is common to determine the content of fat-free body mass and body fat using electrical bioimpedance (BIA) [3]. It is a method which allows to determine the percentage of fat tissue in a precise way, however, not every patient can be measured [36,37,38]. The contraindications for BIA are epilepsy, implanted pacemaker and pregnancy [40]. In some situations the test result may be unreliable, e.g. in people with metal implants, shortly after a meal (<4 hours before the test) or liquids, after increased physical activity (<12 hours before the test), after alcohol consumption (<48 hours before the test), after taking diuretics (within 7 days before the test) [38]. The BIA result may differ from the actual state if the tested person misgrips the electrodes or stands on the analyzer with wet feet. The result may also be imprecise in persons with severe malnutrition [38].
2. Biochemical tests which determine the degree of malnutrition. The basic tests of this group include the determination of plasma albumin concentration, transferrin concentration and prealbumin concentration [3].
3. immunological tests – the determination of total lymphocyte count (CLL) in 1 mm^3 of peripheral blood is particularly important. Malnutrition is diagnosed when CLL drops below 1500/mm^3. The following ranges can be distinguished [39]:
    - 1200–1499/mm^3 – light malnutrition
    - 800–1199/mm^3 – moderate malnutrition
    - <800/mm^3 – severe malnutrition.

It should be remembered that dehydration, which often occurs in patients with eating disorders, may result in haemoconcentration, i.e. thic-

kening of morphotic elements of blood, which may contribute to erroneous interpretation of findings [40].

In order to assess the dietary habits, a dietary history is necessary [4,41,42]. One of the methods of nutritional history is the 24-hour history, which involves obtaining information about meals and drinks consumed during the day preceding the examination. Both basic meals and snacking between them and using dietary supplements [43]. The patient can also keep a dietary diary, which he supplements independently every day. It includes meals, time of their consumption, consumed products (with the amount – weight or household measurements), drinks and snacks. The diary may also include the emotions accompanying the consumption of meals [44].

A reliable nutritional history allows to determine the patient's eating habits and obtain information about the quantity and quality of meals [42]. Additionally, a dietician can analyse the dietary mistakes and correct them [4]. During the history, judgements and statements which could suggest or assess the disease and condition of a patient should be avoided [4]. Blaming the patient for his/her current state of health or criticizing his/her attitude may cause concealment of nutritionally and clinically important information, which delays the treatment process [4,6]. Additionally, during the conversation with a patient, no phrases should be used which could cause fear or anxiety resulting from the health condition. The research proves that intimidation of the patient with irreversible health consequences or death is not an encouragement to actively join the therapy; on the contrary, it may contribute to the development of catastrophic thoughts and complete submission to the disease [45]. However, this does not change the fact that patients should know the diagnosis and current state of health and possible complications of the disease. Nevertheless, this information should be provided in a reliable, accessible way, proportionally to the patient's information needs [45]. At the end of an interview, the information should be provided with reasonable and reliable hope, i.e. about the therapeutic possibilities and continuous support [45]. In the course of the

dietary history, the dietitian may apply elements of motivational dialogue aimed at increasing motivation for treatment and setting realistic targets [4]. There are three basic principles of motivational dialogue, these are [46]:

- empathy – the ability to feel the patient's emotions the way they feel them (e.g. sadness and pleasure), the ability to interpret the patient's words and find what they do not say directly;
- to know the patient's beliefs in relation to the introduction of change related to the treatment process;
- building a sense of causality.

The basic tools of motivating dialogue are: open questions, reflections, reinforcements and summaries [47]. The patient should become aware of his or her own attitude towards the disease and then take appropriate actions to change the inappropriate habits [4]. Next, a dietician should develop an individual nutrition plan taking into account all necessary macro- and micro-nutrients [4]. Meals should be diversified, aesthetic, easily digestible, appropriately selected in terms of colour and taste and consumed in the company of other people. In the case of anorexia nervosa, meals should be served in small amounts but at higher frequencies (5–7 times) and on large plates to reduce the feeling of anxiety resulting from the amount of food consumed [3,42]. In bulimia nervosa and binge eating disorder, the products which favor the overeating attack should be eliminated and the meal times, which the patient should follow, should be precisely defined [3,4].

In anorexia nervosa, in patients with severe cachexia, it is recommended that the energy value of the diet should be 5–10 kcal/kg body weight/day. Around day 8 of therapy, after consultation with the physician, it is recommended to increase the caloric value of the diet by additional 30 kcal/kg body weight and to increase it successively until the due energy value of the diet is reached [48,49]. In patients with no significant malnutrition, it is recommended to start nutritional treatment from 30–40 kcal/kg body weight/day. Then, the caloric value should be gradually increased, by 30–50% per day maximum [4,16]. The energy demand

should be covered in 50–60% by carbohydrates, 15–20% by protein and 30–40% by fats [4,16]. During this time, a low-fat and lactose-free diet should also be used [3]. The body weight increase should be about 0.25–0.5 kg/week in outpatient treatment and about 0.5–1.5 kg/week in hospital treatment [5,6]. Additionally, it is necessary to administer vitamins and minerals in the form of dietary supplements, especially B group vitamins (especially thiamine – 100 mg/day), vitamins C, D, A, and minerals: calcium, magnesium, iron, zinc, and phosphorus [5,48]. The use of foodstuffs for special nutritional purposes, especially protein-enhanced and hypercaloric cocktails is also worth considering [16,48,49].

It is recommended that meals should be eaten in smaller portions, while their frequency increases to 6–7 meals/day. High energy saturation of a meal should be ensured, i.e. the highest possible amount of energy should be provided in a small portion of food [4]. In the initial period of nutritional treatment, symptoms from the gastrointestinal tract may appear (flatulence, feeling of fullness in the stomach, diarrhea). However, they occur in the majority of patients and are characterized by spontaneous atrophy [4].

In the nutritional therapy of bulimia, special attention is paid to elimination of improper eating habits and teaching the patient to recognize the signals indicating physiological hunger. Energy value of the diet in patients with correct body weight should correspond to the total energy demand (product of the basic metabolic value and physical activity index), whereas in overweight people this value can be reduced by about 200–300 kcal/day. The diet should cover the demand for all vitamins and minerals and provide an adequate amount of protein, fat and carbohydrates. It is recommended that the diet plan should include 3 main meals and 2 snacks. This will help to systematize the diet and prevent hunger attacks. The diet should be arranged according to the principles of rational nutrition, taking into account individual needs (exclusion of disliked products from the diet, taking into account dietary preferences). It is important to include products that naturally occur in portions (e.g. bread rolls instead of bread or potatoes instead of groats). Moreover, the dieti-

tian should provide basic recommendations concerning the way of eating meals, which we include [44]:

- eating meals with cutlery, categorically avoiding eating by hand;
- avoiding hot and cold dishes, it is recommended to consume meals at room temperature;
- eating in a sitting position, in a quiet atmosphere, in the kitchen or dining room;
- while dining, it is recommended to switch off all mass media, stop making phone calls and using social networking sites;
- planning meals during the day;
- keeping a nutritional diary, detailing the emotional state during the day;
- shopping only with a list of products;
- avoiding greasy and sweet snacks that may encourage overeating (chips, crackers, nuts, chocolate, ice cream).

Dieticians should also co-determine the method of food intake [3,35]. The best and most physiological method of nutrition is oral; however, some patients completely refuse to eat or have other diseases or complications which exclude this method of nutrition [3]. Other methods of food delivery should be considered, including enteral nutrition, intragastric or intravenous (parenteral) nutrition [3,6,10] (Figure 2).

An important role in recovery is also played by physical activity, which contributes to muscle tissue reconstruction. It is recommended that the exercises are carried out under the supervision of physiotherapists or personal trainers who will adjust the type of exercises to the current state of health. However, this activity should be controlled as there is a risk of its reuse as a compensating method aiming at weight loss [35].

Incorrect implementation of nutritional treatment in patients with anorexia nervosa may lead to refeeding syndrome (RFS). In RFS, electrolyte, metabolic and hormonal disorders occur as a result of too fast introduction of a diet with too high energy density for a given patient [15,49]. During prolonged starvation and severe malnutrition, the metabolism is dominated by catabolic processes, which after a sudden in-

troduction of nutrition rapidly switch to the synthesis processes (anabolism) [48].

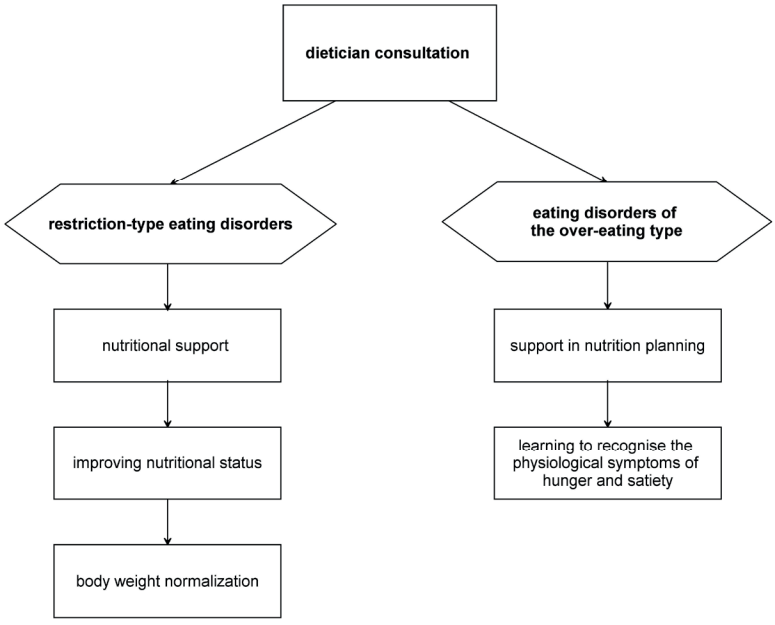

Figure 2. Scheme of dietary consultation in eating disorders

The main symptom of this syndrome is hypophosphatemia [15,49]. The highest drop in blood phosphorus levels usually occurs on day 2–3 of treatment; its lowest values are usually observed on day 5 [15,48]. Phosphorus supplementation should be introduced when its level drops below 0.8 mg/dl. In such cases, the 30–60 mg/kg body weight/day dose divided into 3 or 4 doses per day provided orally [49]. For severe hypophosphatemia (below 0.5 mg/dl), an intravenous phosphorus supplementation at the dose of 20–30 mg/kg bw/day is applied [49]. An increased risk of RFS occurs in patients with BMI below 14 kg/m^2 and after a hunger strike lasting more than 15 days [49].

Hypophosphatemia leads to disturbances in cellular processes which may cause: respiratory failure, circulatory failure, increased risk of infections, haematological complications, gastrointestinal disorders, pare-

sthesias, convulsions, delirium and myocardial atrophy (with severe malnutrition) [15,48]. The complications of RFS may also include peripheral oedema pulmonary stasis, circulatory failure and ventricular arrhythmias, which are the most common causes of death in these patients [15].

To prevent RFS, it is recommended to gradually increase the energy value of the diet, introduce thiamine supplementation as soon as possible and constantly monitor the patient's health [15,49]. The most effective prevention of RFS is early identification of patients at risk [15,48,49].

Summary

The diagnosis and therapy of eating disorders is a difficult challenge for modern medicine, and the number of patients with these diseases is constantly increasing. There is no doubt that all specialists who treat them should have the appropriate level of knowledge and form teams of specialists who will guarantee the best medical care.

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