Prevention of Overweight and Obesity in Patients at Increased Cardiovascular Risk

Nurilloeva Shakhodat Nurillo kizi
Bukhara State Medical Institute named after Abu Ali Ibn Sina, Assistant of the Department of Internal Medicine and Endocrinology

Abstract. 108 (89.25 %) of 121 patients undergoing K transmission showed a reduction in the prevalence of metabolic syndrome components using traditional preventive methods and a special algorithm for diet therapy and physical activity. 13 people no change was observed in the patient (10.7%), that is, they changed their usual lifestyle.

Key words: ischemic heart disease, arterial hypertension, cardiovascular risk, overweight and obesity, different levels of hyperglycemia.

Justify the importance of D

Today, obesity has become one of the most important medical and social problems in the world, due to the high level of its prevalence and the huge budget costs to eliminate its consequences.

Globally, the prevalence of overweight and obesity has increased by almost 30-50% among adults and children over the past three decades.

Today, obesity is considered the most important risk factor not only for cardiovascular diseases and type 2 diabetes (according to the World Health Organization, overweight and obesity account for 44-57% of type 2 diabetes 17-23% - ischemic heart disease, 17% - arterial hypertension, 30% - cholecystitis, 14% - arthrosis, 11% - low-quality tumor, as well as the risk of development of tumor diseases and reproductive diseases increases According to statistics, in general, obesity leads to a 4-fold increase in death from cardiovascular diseases, and a 2-fold increase in death from cancer.

In the 21st century, for humanity, which has overcome epidemics of life-threatening infections throughout its centuries-old history, the problem of cardiovascular disease has become urgent among all causes of illness and death. An important role was played by limiting physical activity, increasing the caloric content of food, and changing the lifestyle associated with a constant increase in emotional stress. All of these increase the main risk factors for cardiovascular diseases: high blood pressure, dyslipidemia, diabetes and obesity.

Obesity is recognized as one of the most important risk factors for the development of cardiovascular diseases, early disability of patients and early death.
According to the Framingham Heart Study, obesity was found to be an independent risk factor for all-cause mortality. With 1 degree of obesity, the risk of developing diabetes increases 2-3 times, 2 degrees - 5 times, 3 degrees - 10 times. To date, it has been proven that visceral obesity is the most dangerous type of obesity, which is common in modern society and is the main criterion for MS.

**The purpose of the study. Nondrug** prevention of overweight and obesity for patients at high cardiovascular risk.

**The main part**

**Materials and research methods.**

A total of 121 patients were examined, 62 were women and 59 were men. During the examination, the following research methods were used - standard questionnaire, abdominal obesity, increased blood pressure, blood lipids, Kettle's index. Obesity (1997) is calculated according to the formula mentioned in the Kettle index: weight (kg) / height (m)², ≥ 25 and KI levels ≥ 30 are taken as obesity. At the same time, it is recommended to obtain KI values > 29 in population studies on OTV (Rose GA, Blackburn H., 1968). CI values ≥ 30 were obtained for the OTV criteria, as this level of CI is not significantly different from the recommended OTV criteria for population studies.

**Table 1. of patients by age and sex**

<table>
<thead>
<tr>
<th>Age group</th>
<th>Total</th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>abs (n)</td>
<td>%</td>
<td>abs (n)</td>
</tr>
<tr>
<td>20-29 years old</td>
<td>27</td>
<td>11</td>
<td>40.7</td>
</tr>
<tr>
<td>30-39 years old</td>
<td>29</td>
<td>11</td>
<td>37.9</td>
</tr>
<tr>
<td>40-49 years old</td>
<td>34</td>
<td>13</td>
<td>38.2</td>
</tr>
<tr>
<td>50-59 years old</td>
<td>17</td>
<td>6</td>
<td>35.3</td>
</tr>
<tr>
<td>Age 60-69</td>
<td>14</td>
<td>5</td>
<td>35.7</td>
</tr>
<tr>
<td>Total</td>
<td>121</td>
<td>46</td>
<td>75</td>
</tr>
</tbody>
</table>

**Research results**

According to the obtained data, the prevalence of AS among the population was quite high (Table 1). The overall prevalence of abdominal obesity among women was 41.57 %, among men 23.9% ( P <0.01).

**Table 2. Prevalence of abdominal obesity in the population (%)**

<table>
<thead>
<tr>
<th>Age group</th>
<th>Women n = 75</th>
<th>Men (n = 46)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>There is an AS</td>
<td>There is no AS</td>
</tr>
<tr>
<td>20-29 years old</td>
<td>18.74</td>
<td>81.26</td>
</tr>
<tr>
<td>30-39 years old</td>
<td>45.49</td>
<td>54.51</td>
</tr>
<tr>
<td>40-49 years old</td>
<td>47.55</td>
<td>52.45</td>
</tr>
<tr>
<td>50-59 years old</td>
<td>61.50</td>
<td>38.5</td>
</tr>
<tr>
<td>Age 60-69</td>
<td>74.13</td>
<td>25.87</td>
</tr>
<tr>
<td>Total</td>
<td>41.57</td>
<td>58.43</td>
</tr>
</tbody>
</table>

Note: the table shows the significance of the differences compared to the previous age group.
18.74% of young women, the presence of AS is considered dangerous. It should be noted that in the fourth decade there is a large increase in the frequency of AS. At the age of 30-39, the frequency of AS (45.49%) is 2.62 times higher (18.74%) than at the age of 20-29. The differences were significant (p <0.01). Then, up to 50 years old, the frequency of AS almost does not change, but the frequency of AS increases significantly in the 50-59 and 60-69 age groups (61.5% and 74.13%, respectively). The female population with abdominal obesity has an unfavorable epidemiological profile for AS, indicating that the situation has arisen. Given that AS is one of the main causative mechanisms of MS, it should be recognized that the risk of STDs is very high in the female population.

Abdominal obesity in men is -13.45%, 36.54%, 28.31%, 45.65% and 45.64%, respectively. In men aged 30-39, the frequency of AS increased by 2.46 times compared to 20-29 years, and 50-59 years increased by 1.86 times compared to 40-49 years.

The next component of the metabolic syndrome to be studied is an increase in body weight. This concept includes two conditions - obesity and OTV. According to the obtained data (Table 3), 121 residents of the research group suffer from various levels of obesity.

Table 3. Overweight and obesity with drugs without points of overweight and obesity in the population

<table>
<thead>
<tr>
<th>No</th>
<th>Indicator</th>
<th>Abs</th>
<th>Average indicator</th>
<th>Kettle index</th>
<th>Reliability difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Obesity I degree</td>
<td>52</td>
<td>33.6 ± 0.58</td>
<td>27±30</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>2.</td>
<td>Obesity II degree</td>
<td>44</td>
<td>37 ± 1.05</td>
<td>35-39.4</td>
<td>&lt;0.05</td>
</tr>
<tr>
<td>3.</td>
<td>Obesity III degree</td>
<td>25</td>
<td>42 ± 1.05</td>
<td>39.5 &lt;</td>
<td>&lt;0.05</td>
</tr>
</tbody>
</table>

Grade I obesity was diagnosed in 47, the average score was 33.6 ± 0.58 (differences are statistically significant, p < 0.01). II degree of obesity was observed in 39 patients, mean values were 37 ± 1.05 (differences were statistically significant, p < 0.05) and III degree obesity was observed in 35 patients, mean values were 42 ± 1.05 (differences are statistically significant) <0.05.

carbohydrate and lipid metabolism disorders without drugs - rational nutrition and reasonable physical activity. A rational diet is necessary so that a person does not get fat.

For men, the waist should not exceed 94 cm, for women, it should be more than 80 cm, preferably less. You should limit fatty foods and be careful with carbohydrates, if you do not go along with regular physical activity, because obesity is not observed from the abundance of sweets, the second is physical activity. The minimum physical activity required for these purposes is brisk walking 4-5 times a week, 30 minutes a day.

In overweight and obese patients with cardiovascular disease risk factors (high blood pressure, hyperlipidemia, hyperglycemia), lifestyle changes lead to a slight body weight loss and decrease to 3-5%, which has significant clinical health benefits.

A sustained weight loss of 3 to 5% leads to clinically significant reductions in triglycerides, blood glucose, HbA1c, and the risk of developing type 2 diabetes; With long-term weight loss, you can achieve your goals for blood pressure, VLDL, and VLDL, further reduce triglycerides, and blood glucose, and reduce the need for medications to control blood pressure, blood glucose, and lipids.

Overweight patients should reduce their calorie intake. 1200-1500 kcal/day for women, 1500-1800 kcal/day for men). For energy deficit, it is necessary to prescribe a science-based diet that limits 500 kcal or 750 kcal/day or a certain type of food (for example, high-carbohydrate, low-fiber, or fatty foods should be excluded). It is carried out in order to create an energy deficit by reducing food consumption.
For overweight or obese patients, according to the patient's wishes and health, the benefits of losing body weight, prescribe a low-calorie diet after consultation with the dietitian. Encouraging obese or overweight patients to participate in a 6-month comprehensive lifestyle modification program that helps participants adhere to a low-calorie diet and increases physical activity through behavioral strategies. High intensity (≥14 visits over 6 months) individual or group weight loss sessions with a trainer can be scheduled. Overweight or obese patients are recommended to participate in a long-term (≥1 year) complex maintenance program that provides regular contact, such as once a month or more often, to help participants achieve higher levels of physical activity, to promote weight loss is determined, per minute / week), monitor weight regularly (once a week or more) and follow a low-calorie diet (necessary to reduce body weight).

**Recommendations for physical activity**

Approximate scheme of physical rehabilitation classes

- degree obesity and a satisfactory condition of the cardiovascular system 3 times a week, once with therapeutic gymnastics they are engaged in hiking and sports.
- II - I degree obesity accompanying diseases of the patients, but with a satisfactory condition of the cardiovascular system 2 times a week - medical gymnastics, 2 times - walking, once running and sports games.

**Picture. 1. Distribution of physical activity**
II - 1 level obesity was _ _ patients joint _ _ without diseases if 2 times - medical _ _ gymnastics, 1 time - on foot walking, 2 times - running 1 time - sports games _ _ recommendation will be done.

Diet therapy heart is blood vein diseases danger high was _ _ patients and of obesity present values determination for excess the body weight (TMI 25.0-29.9 kg / m²) and obesity (TMI ≥ 30 kg / m²) current from the values use need _ All reasons according to _ scientist _ _ danger high was _ _ patients determination for is used.

Too much the body weighty and obesity was _ _ patients to know should be their OTV level How high If so, the heart is blood vein diseases, other scientist _ _ reasons so much high will be _

Very less calories diet (<800 kcal / day) only separately cases is used _ and only the patient observation medical in control to be _ possible was _ _ specialized health _ _ storage in the institution it’s hard specialists by weight when supplied _ _ to lose _ speed high to be _ can _

Diet for obese patients:

- Fractional meals during the day with 3 main meals and 2 snacks.
- Dinner should be at least 3-4 hours before bedtime, no later than 19:00.
- The daily distribution of calories between meals should be as follows: breakfast - 25%, second breakfast - 10%, lunch - 35%, lunch - 10% and dinner - 20%.

Daily nutrition for women (in kcal): 18-30 years old: (0.0621 * kg + 2.0357) * 240 * JFK (physical activity coefficient)
31-60 years: (0.0342 * weight kg + 3.5377) * 240 * JFK
Over 60: (0.0377 * weight in kg + 2.7545) * 240 * JFK

Daily nutrition for men (in kcal): 18-30 years old: (0.0630 * kg + 2.8957) * 240 * JFK
31-60 years: (0.0484 * weight in kg + 3.6534) * 240 * JFK
Over 60: (0.0491 * weight in kg + 2.4587) * 240 * JFK

Physical activity coefficient: if the patient's physical activity is low (mental, sedentary, light work at home), the result is multiplied by a factor of 1;

moderate physical activity (work related to walking, physical education at least 3 times a week) - by a factor of 1.3;

high physical activity (hard physical work, playing sports), the result is multiplied by 1.5 times.

Approximate daily diet for 1-2 days of fattening:

First breakfast: low-fat cottage cheese (100 g), carrots roasted (200 g), coffee with unsweetened milk (200 g).

Second breakfast: fresh unsalted cabbage salad with an apple or a tablespoon of sour cream (170 g).

Dinner: vegetable borscht (200 g), fried cabbage (150 g), boiled meat (90 g), dried fruit compote without sugar (200 ml).

Afternoon (quadruple): low-fat cottage cheese (100 g), namatak (200 ml).

Dinner: boiled fish (100 g), vegetable salad (125 g), green tea (200 g).

At night: low-fat kefir (150 g).
Allowed amount of bread for the whole day - 150 g.

**Approximate daily diet for 3-degree obesity:**

**First breakfast**: boiled meat (90 g), vegetable salad with vegetable oil (150 g), coffee with unsweetened milk (200 g).

**2-breakfast**: apple (about 100 g).

**Lunch**: vegetarian borscht (200 g), fried cabbage (150 g), boiled fish (100 g), unsweetened apple juice (200 ml).

**Four**: low-fat milk (180 g).

**Dinner**: bread with meat cooked with eggs (90 g), green tea (200 g).

**At night**: low-fat kefir (150 g).

*Picture. 2. The optimal ratio of products recommended by WHO.*
Figure 3. Approximate caloric menu of the diet for one day (1635 kcal)

Ten: fresh cabbage salad without salt with sour cream - 170 g.
Lunch: vegetarian cabbage soup (½ portion) - 200 g, boiled meat - 90 g, lean green peas - 50 g, fresh apple - 100 g
Four: calcined cottage cheese - 100 g, kusminka broth - 180 g.
Dinner: boiled fish (pork) - 100 g, vegetable borsch (½ portion) - 125 g.
At night: kefir - 180 gr.
Throughout the day: rye bread - 150 g.

Of body weight and height, calculation of TVI is carried out as follows.
Body mass index is calculated according to the following formula.

TVI=kg/m²

Here:
✓ kg - body weight in kilograms
✓ m – height in meters

Too much the body weighty and obesity was _ _ of patients waist circle each year or often _ _ measurement _ _ need _ . To patients waist circle How big If so, the heart is blood vein diseases, type 2 sugary diabetes and another scientist _ _ reasons so much superiority with manifestation will be _ _
4. Nomogram for determining TVI

Picture.

**OTV by points:**

1st degree obesity (30.0-34.9 kg) = 2 points

2nd degree obesity (35.0 - 39.9 kg) = 3 points

3rd degree obesity (> 40.0) = 4 points

were diagnosed with 1st degree obesity, 44 with 2nd degree obesity and 25 with 3rd degree obesity.

In the case of 1 degree obesity, the following is recommended: diet therapy (consisted of 60% proteins (including animal), 25% vegetable fats, 5-8 g of salt and up to 1.2 liters of liquid. ) + physical activity (patients with joint diseases, but with a satisfactory condition of the cardiovascular system 2 times a week - therapeutic exercises, 2 times - walking, once running and sports games).

In case of obesity of the 2nd degree, the following is recommended: diet therapy (60% proteins, 25% vegetable fats, 4-8 grams of salt and up to 1.2 liters of liquid. All products are raw (vegetables and fruits), boiled, daily diet is divided into 6 small portions + physical activity (patients with co-morbidities, but with a satisfactory condition of the cardiovascular system 2 times a week - therapeutic exercises, 2 times walking, 1 time running and sports games).

In case of obesity of the 3rd degree, the following is recommended: diet therapy (80% proteins (70% of them from animals), 60 grams of fats (30% of them from plants), 100 grams of carbohydrates. The total calorie content of food products is 1300 should not exceed kilocalories + physical activity (with a satisfactory state of the cardiovascular system, they do medical gymnastics 3 times a week, one-time walks and sports games.).

Thus, after the appointment of diet therapy and physical activity, 48 of 52 patients were obese, 40 of 44 patients were obese, 20 of 25 patients were obese of 3 degrees. a positive trend was observed.
Summary.

Thus, 108 of 121 patients under observation (89.25%) showed a decrease in the prevalence of metabolic syndrome components using traditional preventive methods and a special algorithm for diet therapy and physical activity.

13 people no change was observed in the patient (10.7%), that is, they changed their usual lifestyle.

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