Preventive programs

in the elderly in an aesthetic medicine

Programas preventivos en el anciano en medicina estética

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Abstract

Introduction. The issues of life quality provision for older people have become one of the topical state social trends in recent years, which largely dictates the development of gerontology and geriatrics. **Aims.** The study's main aim is to assess preventive programs in the elderly in aesthetic medicine. **Materials and methods**. The research bases were the clinical bases of the department, the Research Medical Center "Gerontology" and the clinic of Aesthetic Medicine "Chistye Prudy". At the first stage, the possibilities of aesthetic medicine clinics in the implementation of gerontological prevention programs were studied. At this stage, a survey was conducted among the heads of clinics (n=228) on the types of medical activities available to their organizations. The second stage of the study included 213 patients of aesthetic medicine clinics. The control group included 71 patients (men – 31, women – 40) aged from 60 to 64 years, the average age was 62.7±1.1 years. Based on the results obtained, the clinical efficacy of the gerontological prophylaxis model. **Results.** The clinical effectiveness of the gerontological prevention model based on the theory of age-related viability allows for multicomponent protection by affecting the following domains: functional and psychological. **Conclusion.** In aesthetic medicine clinics, it seems appropriate to implement gerontological prevention programs in addition to the basic services provided. To improve the quality of care, it is advisable to train cosmetologists, plastic surgeons, and other specialists of aesthetic medicine clinics on preventive gerontology in the system of additional professional education.

Keywords: preventive programs, aesthetic medicine, older age, geriatric patient.

Resumen

Introducción. El tema de la provisión de calidad de vida para las personas mayores se ha convertido en una de las tendencias sociales estatales de actualidad en los últimos años, lo que dicta en gran medida el desarrollo de la gerontología y la geriatría. **Objetivos.** El objetivo principal del estudio es evaluar los programas preventivos en el anciano en medicina estética. **Materiales y métodos**. Las bases de investigación fueron las bases clínicas del departamento, el Centro Médico de Investigación "Gerontología" y la clínica de Medicina Estética "Chistye Prudy". En una primera etapa se estudiaron las posibilidades de las clínicas de medicina estética en la implementación de programas de prevención gerontológica. En esta etapa, se realizó una encuesta entre los jefes de clínicas (n=228) sobre los tipos de actividades médicas disponibles para sus organizaciones. La segunda etapa del estudio incluyó a 213 pacientes de clínicas de medicina estética. El grupo de control incluyó a 71 pacientes (hombres - 31, mujeres - 40) con edades de 60 a 64 años, la edad promedio fue de 62,7±1,1 años. En base a los resultados obtenidos, la eficacia clínica del modelo de profilaxis gerontológica. **Resultados.** La efectividad clínica del modelo de prevención gerontológica basado en la teoría de la viabilidad relacionada con la edad permite una protección multicomponente al afectar los siguientes dominios: funcional y psicológico. **Conclusión**. En las consultas de medicina estética parece adecuado implantar programas de prevención gerontológica además de los servicios básicos prestados. Para mejorar la calidad de la atención, es recomendable capacitar a los cosmetólogos, cirujanos plásticos y otros especialistas de las clínicas de medicina estética en gerontología preventiva en el sistema de educación profesional adicional.

Introduction

Aesthetic medicine clinics have a resource potential for the implementation of gerontological prevention programs since in the rating scale of the management tasks of organizations, this area ranks second after the provision of services in the field of aesthetic medicine, and the possibility of providing related medical services ranges from 48.7-89.9%[1-4]. The standard model of gerontological prevention programs for patients of aesthetic medicine clinics is based on the doctrine of age-related viability and provides for the implementation of measures within five domains: nutritional (ensuring the quality of nutrition and dental health), psychological (prevention of depression, insomnia, chronic pain syndrome), physical (ensuring the proper level of aerobic and anaerobic loads and exercises to train the balance function), cognitive (protection of cognitive health), medical (promotion of a culture of regular medical examinations)[5-8].

It should be noted that the increase of people's life duration is accompanied not by a simple increase in the number of years, but also by a change of the so-called aged patient clinical profile[2,3]. The greatest changes have been observed in the age group of 60-64 during the last two decades. People of this age have much better health indicators than the previous generation; many of them do not have significant somatic diseases yet. In many respects, such an improvement in health indicators became possible due to the development of large-scale measures for population prevention in relation to socially significant chronic non-infectious pathology among young and middle-aged people[5,6].

Due to the existing regular age-related changes, the age of 60-64 has a high risk of disease development in the coming years. However, in real clinical practice, there are no targeted preventive gerontological programs for people of early old age[7,8]. Besides, traditional resources for the implementation of preventive programs in the form of primary health care capabilities are at the limit of their possibilities and can no longer provide a larger volume of preventive care[9-11]. This dictates the need to search for and substantiate new options for preventive work with young people. One of the promising areas is to attract new types of medical organizations, such as the clinics of aesthetic medicine. In this regard, the studies devoted to the problem of gerontological prophylactic program implementation in the clinics of aesthetic medicine seem to be very relevant[12-16]. Thus, this study aimed to consider preventive programs among the elderly in aesthetic medicine.

Material and methods

The present study was carried out at the Department of Therapy, Geriatrics and Anti-Aging Medicine of the Academy of Postgraduate Education of the FSBI FSRC FMBA of Russia. The research bases were the clinical bases of the department, the Scientific Research Medical Center «Gerontology» and of aesthetic medicine clinic «Chistye Prudy».

The study consisted of two stages:

- the first stage: «The clinics of aesthetic medicine as the promoters of gerontological prevention programs»; and - the second stage: «Development and implementation of a standard model of gerontological prevention programs for aesthetic medicine clinics.»

At the first stage, it was studied the possibilities of aesthetic medicine clinics during the implementation of gerontological prevention programs. At this stage, the survey of the heads of clinics (n = 228) was conducted on the subject of medical activity types that their organizations have, and the availability of which is advisable during the implementation of gerontological prevention programs. Also, an expert assessment of medical organization activities was carried out in relation to management tasks[8,12,13]. The evaluation was carried out in 106 aesthetic medicine clinics. For comparative analysis, such an assessment was carried out in 68 municipal city polyclinics. The expert group included 7 people - health care organizers of the highest qualification category, included the doctors of sciences - 4, and the candidates of sciences - 3.

Besides, within the first stage, it was studied the opinion of patients about the most preferable options of the first contact doctor for information provision on gerontological prevention. The survey involved 648 people whose age was 60 - 64, included 320 people - the patients of municipal polyclinics (158 men and 162 women, whose average age made 62.8±1.4 years), 328 people - the patients who, in addition to municipal polyclinics, received medical services at the clinics of aesthetic medicine (29 men and 299 women, whose average age made 62.4±1.6 years). The patients for questioning were selected by the random selection method.

At the second stage, the standard program of gerontological prevention "Invulnerability ("Resilience") was introduced in the clinics of aesthetic medicine, whose doctors were trained in preventive gerontology[12-15].

The second stage of the study included 213 patients of aesthetic medicine clinics. The control group included 71 patients (31 men, and 40 women) whose ages made 60 - 64 years, the average age was 62.7±1.1 years. The main group included 142 people (40 men, 102 women) whose age made 60 - 64 years, the average age was 62.3 ± 1.0 years. The control group patients received the services in the field of aesthetic medicine. In addition to this, a typical gerontological prophylaxis program was implemented for the patients of the main group. All patients underwent a

standard clinical examination with appropriate protocols and clinical guidelines. These patients did not have any somatic or other pathology that could affect the interpretation of the research results. Of the existing pathology in the control group, 39 people (55.0%) had spine osteochondrosis, 17 people; (23.9%) - chronic diseases of the gastrointestinal tract in remission; in the main group - 72 people (50.7%) and 41 people (28.9%), respectively. The following indicators were chosen as the control indicators of gerontological prophylaxis program implementation effectiveness: physiological: systolic (SBP) and diastolic (DBP) blood pressure expressed as mmHg; the indicators of functional status (aging profile): 6-minute walk test (sec), hand dynamometry (kg); psychological and cognitive: the assessment of nervous orthorexia according to the questionnaire[8], depression according to the Beck scale[9], pain according to 10-point visual analog scale, sleep quality according to the Epworth sleepiness scale (all indicators were evaluated in points). The checkpoints were the points before the start of the gerontological prophylaxis program and after 6 months since the beginning of implementation. Besides, the indicators of hand dynamometry and age discrimination were also assessed during 3 months.

The patients included in the study gave informed consent for their participation. The equipment used in the study had the appropriate certification on the territory of the Russian Federation. The ethical committee approved of the study.

During the statistical analysis of the results obtained, we used the following: calculation of intensive and extensive indicators of average values, Student's t-coefficient; contingency table analysis method; Excel spreadsheets for mathematical and statistical data processing using the 'Statgraphics plus for Windows' computer program. Results were expressed as mean ± S.D., and a value of p<0,05 was considered significant.

Results and discussion

Over the past 20 years, medical organizations of a new format have been formed in Russia and abroad, which can be classified as the clinics of aesthetic medicine. Currently, these clinics try to expand the range of services, including preventive ones. We compared the management tasks of these medical organizations and the management tasks of medical organization established forms, such as municipal polyclinics (Table 1). It turned out that in the ranking of municipal polyclinic tasks, the first five places are occupied by the following tasks: treatment of diseases, medical examination, implementation of general population preventive programs, mortality rate reduction, optimization of the workload on medical personnel (p<0.05). In the task ranking of aesthetic medicine clinics, the first five places are occupied by the following tasks: the provision of services in the field of aesthetic medicine, the implementation of age-oriented preventive programs, the provision of services in related fields, patient satisfaction increase, doctor level of knowledge increase in the field of gerontology (p<0.05). When analyzing, attention is drawn to the following positions, which favorably distinguish the clinics of aesthetic medicine from municipal polyclinics: the preventive direction in the ranking is at the same level as that of municipal polyclinics, but at the same time it has an age-oriented focus; an important task is to increase patient satisfaction, which contributes to service quality improvement; the need for targeted education of doctors in the field of gerontology is actualized; today, the task of reducing the burden on the staff of aesthetic medicine clinics is not a priority. This indicates that the clinics of aesthetic medicine can become an additional link in the promotion of preventive programs, while they do not replace the preventive focus of municipal polyclinics in the field of traditional population prevention.

Table 1. Rating scales of medical organization tasks when working with 60–64-year-old patients

Rating	Management task	χ^2, p
Municipal polyclinics		
1	Treatment of diseases	7.2; 0.0006
2	Periodic health examination conduct	8.3; 0.0009
3	Implementation of general population preventive programs	7.7; 0.0014
4	Mortality rate reduction	7.4; 0.0024
5	Optimization of the workload on medical personnel	7.5; 0.0104
Aesthetic medicine clinics		
1	Provision of services in the field of aesthetic medicine	8.2; 0.0001
2	Implementation of age-oriented prevention programs	8.0; 0.0062
3	Provision of services in related fields	7.7; 0.0072
4	Patient satisfaction improvement	8.5; 0.0081
5	Gerontology knowledge level increased among the doctors	7.4; 0.0218

In addition to sufficient focus on purpose, aesthetic medicine clinics must have the ability to provide services in related areas that may be necessary during the implementation of gerontological prevention programs. For example, 78.1% of aesthetic medicine clinics can provide consultations with a general practitioner, a cardiologist - 52.5%, a gastroenterologist or nutritionist - 61.0%, a neurologist - 48.7%, an endocrinologist - 77.2%, an obstetrician-gynecologist - 89.9%, rehabilitation expert - 50.0%, psychotherapist or psychologist - 60.5%. This is important for the implementation of the team principle during the provision of preventive gerontological care.

Thus, modern clinics of aesthetic medicine have human and material resources to implement gerontological prophylaxis programs.

In the course of the study, we developed a typical gerontological prophylaxis program for aesthetic medicine clinics "Resilience".

The program contains a set of methods, each of which has an evidence base in terms of impact on individual parameters of age-related viability. At the same time, these techniques have not previously been used or studied in such a combination.

The ideology of the program is to modify the lifestyle of patients through the interconnected implementation of several components - nutritional, psychological, physical, cognitive, and medical.

The nutritional component provides for the implementation of two directions: the study of nutritional status with the definition of nutritional quality and the presence/absence of nutritional deficiencies; correction of nutrition by modifying the diet, if necessary, compensating for deficiencies by the means of nutritional support; weight correction with a preliminary assessment of orthorexia nervosa syndrome presence/absence; dental health provision.

The psychological component provides for the impact on two leading medical causes of depression during early old age - insomnia and chronic pain syndrome, which is most often the consequence of spine osteochondrosis: measures to identify sleep disorders and their correction; instilling of sleep hygiene skills; screening of chronic pain syndrome and its correction in accordance with current protocols and clinical guidelines.

The physical component provides for the achievement of physical activity volumes in accordance with the "WHO Global Recommendations for Physical Activity for All Ages" and involves three areas: aerobic activity provision; strength training regime provision; regular exercise to train balance function.

The cognitive component provides for a set of measures to support cognitive health: cognitive training (mastering of electronic programs, learning foreign languages, "Intelligence Gym" gymnastics, etc.); information hygiene measures to prevent chronic information exhaustion syndrome.

The medical component assumes that a patient undergoes regular medical examinations, combining both traditional medical examinations and additional measures aimed at premature aging diagnosing and its variants.

The head of the program brigade (team) was a doctor of aesthetic medicine clinic, who mastered the program of additional professional education of the expert level "Gerontology" (252 hours). The team included other clinic experts who had mastered the programs of additional professional education in the field of preventive gerontology at the basic and target levels. The team was formed in such a way as to provide support for the patient ultimately in all the components of the standard program.

Before the start of the program, traditional diagnostics and the diagnostics of premature aging was carried out based on the "GeroScience" approaches. Further, the initial level of age-related viability was determined. Based on a typical gerontological prophylaxis program, an individualized program was developed for each patient, taking into account the initial parameters, based on the partnership between the doctor and the patient. Individual goals were determined, which were desirable to achieve as the program result, a six-month follow-up was carried out after the end control was carried out using the same parameters as before the program started. This cyclical approach can be used repeatedly in the practical implementation of the program.

One of the most common diseases in old age is arterial hypertension. In traditional prevention programs, such a risk group as the people with high normal blood pressure for the development of arterial hypertension is rarely singled out separately. We studied purposefully the impact of gerontological prevention programs on this group of people.

The results show that the distribution of people into groups depending on blood pressure values became more protective for health. So, among the patients of the main group, the proportion of people with optimal blood pressure ($p<0.05$) increased significantly from 4.2% to 9.2%, with normal blood pressure - from 31.0% to 68.3%, the proportion of people with high normal blood pressure ($p<0.05$), on the contrary, decreased significantly from 59.2% to 21.8%.

This redistribution was reflected on the average values of blood pressure. Thus, in the main group, SBP decreased significantly ($p<0.05$) from 131.6 ± 2.2 mmHg to 123.8 ± 2.9 the mmHg, DBP decreased significantly ($p<0.05$) from 85.0 ± 1.0 mmHg to 80.2 ± 0.9 mmHg. At the same time, SBP increased significantly ($p <0.05$) in the control group from 131.4 ± 1.9 mmHg up to 136.3 ± 1.8 mm of mmHg, while DBP tended to increase from 84.9 ± 2.3 mmHg up to 87.9 ± 2.0 mmHg. Thus, six months after the start of gerontological prophylaxis program implementation, the blood pressure values in the main group were significantly lower than in the control group ($p<0.05$).

An interesting fact was that the patients of both the main and control groups had a syndrome of nervous orthorexia. It was assessed among the people of the main group at 6.6±0.8 points before the implementation of preventive programs and significantly decreased to 2.1±0.3 points after six months, while among the people of the control group the indicators remained almost unchanged: 6.3±0.5 and 6.4±0.6 points, respectively. The positive dynamics of the orthorexia nervosa syndrome among the patients of the main group contributed to a safer and more effective correction of body weight.

Gerontological prophylaxis programs have had a positive impact on such an important clinical indicator of functioning as a six-minute walk test. Thus, the result increased significantly ($p <0.05$) in the main group from 450.3±5.2 m to 524.4±8.9 m. At the same time, there was a non-significant tendency towards the indicator decreased in the control group, from 448.2±9.0 m to 432.1±10.2 m. Thus, six months after the start of gerontological prophylaxis programs, the results of the six-minute walk test were significantly better in the main group than in the control group ($p<0.05$).

In addition to walking speed increase, the indicators of wrist dynamometry also improved, which indicated protection

against sarcopenia. So, among the men of the main group, the result increased significantly ($p<0.05$) from 25.2 ± 1.1 kg to 35.0±1.1 kg of the follower - from 22.9±1.5 kg to 33.1±1.9 kg. Among the women of the main group, the result increased significantly ($p <0.05$) from 18.9 ± 1.9 kg to 29.5±1.3 kg of the follower - from 17.6±1.5 kg to 27.9±1.1 kg. At the same time, no positive dynamics were observed in the control group. Thus, six months after the start of gerontological prophylaxis programs, the results of hand dynamometry were significantly better in the main group than in the control group ($p<0.05$).

Gerontological prevention programs have had a positive impact on the psychological status of patients. Thus, the distribution of people into groups depending on depression level turned out to be protective. Among the patients of the main group, the proportion of the people with no depression increased significantly ($p<0.05$) from 50.7% to 81.7%. On the contrary, the proportion of people with moderate depression decreased significantly ($p<0.05$) from 44.3% to 24.7%.

The level of depression according to the Beck scale decreased significantly ($p<0.05$) from 9.8 ± 0.3 points to 6.4±0.3 points in the main group. At the same time, the level of depression did not change in the control group: 9.7±0.4 and 9.9±1.0 points, respectively. Thus, six months after the start of gerontological prophylaxis programs, the indicators of depression according to the Beck scale were significantly better in the main group than in the control group ($p<0.05$).

Besides, the quality of sleep has improved. The distribution of people into groups depending on the quality of sleep turned out to be protective. Among the patients of the main group, the proportion of people with no sleep disorders increased significantly ($p<0.05$) - from 36.6% to 71.6%. On the contrary, the proportion of people with unexpressed sleep disorders decreased significantly ($p<0.05$) from 63.4% to 24.7%. At the same time, sleep quality indicators on the Epworth sleepiness scale significantly improved ($p<0.05$) in the main group from 14.7±0.5 points to 19.0±0.4 points. At the same time, this indicator did not change in the control group: 14.8±0.8 and 14.6±0.5 points, respectively. Thus, six months after the start of gerontological prophylaxis programs, sleep quality indicators were significantly better in the main group than in the control group ($p<0.05$).

An important indicator of the medical-social effectiveness of gerontological prophylaxis programs was the decrease of age-related discrimination perception. Thus, the main group had a significant decrease ($p<0.05$) of the age discrimination indicator from 64.3±3.3 points to 35.2±4.1 points. At the same time, this indicator did not change in the control group: 66.5±4.1 and 65.2±3.9 points, respectively. Thus, six months after the start of gerontological prophylaxis programs, the indicators were significantly better in the main group than in the control group ($p<0.05$).

Conclusion

The clinics of aesthetic medicine have the resource potential for the implementation of gerontological prevention programs since in the rating-scaling of organization management tasks, this area ranks second after the provision of services in the field of aesthetic medicine ($\chi^2 = 8.0$, $p = 0.0062$), and the possibility of providing related medical services fluctuates in the range of 48.7-89.9%. The typical model of gerontological prevention programs for the patients of aesthetic medicine clinics is based on the doctrine of age-related viability and provides for the implementation of activities within five domains: nutritional (ensuring the quality of nutrition and dental health), psychological (prevention of depression, insomnia, chronic pain syndrome), physical (ensuring the proper level of aerobic and anaerobic loads and exercises to train balance function), cognitive (protection of cognitive health), medical (promotion of regular medical examination culture). The clinical efficacy of the gerontological prophylaxis model based on the doctrine of age-related viability makes it possible to provide multi-component protection by affecting the following domains: functional (in particular, the decrease of patients with high normal blood pressure within six months from 47.9% to 21.8%, $p<0.05$, and the increase of patients with normal blood pressure from 21.9% to 68.3%, $p<0.05$) and psychological (depression decrease according to Beck from 9.8 to 6.4 points, $p<0.05$). Gerontological prophylaxis programs can significantly reduce the subjectively experienced age-related discrimination according to the E. Palmore scale from 64.3 to 35.2 points ($p<0.05$).

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