

# The prevention of cardiovascular diseases in old patients – state of problem

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Nowadays the WHO pays to the problem of ageing and health a lot of attention.

**The objective:** to found out the features of prevention and management of cardiovascular diseases in elderly people.

**Materials and methods.** A systematic analysis of 67 available literature sources and guidelines about management of cardiovascular diseases in old people received from JAMA, Scholar, NCBI, Cochrane Library and PubMed databases for the 2007–2017 with keywords related to the aim was conducted.

**Results.** European and American guidelines have some recommendation for care of old people. Unfortunately, at present Ukraine doesn't have specific protocols for the treatment of old patients. However, certain emphases are identified in National Unified clinical protocols of primary, emergency and secondary (specialized) medical care for hypertension, CVD and dyslipidemia.

**Conclusion.** In accordance with Global Strategy and Action Plan of WHO it is necessary to develop more clear guidelines for care of old people, especially in prevention and management of cardio-vascular diseases.

**Key words:** old people, cardio-vascular diseases, prevention guidelines.

Ageing is a physiological process that develops due to the impact of exogenous and endogenous factors to evident limitation of the organism's adaptation, leads to increase of disease and death. Nowadays the WHO pays to the problem of ageing and health a lot of attention. According to the WHO classification (2012) there are the following age categories: 25–44 years old – a young age; 44–60 years – the middle age; 60–75 years – old age; 75–90 years – senile age, older than 90 – centenarians. The pace of population ageing around the world is increasing dramatically. Today, for the first time in history, most people can expect to live into their sixties and beyond. By 2050, the world's population aged 60 years and older is expected to total 2 billion, up from 900 million in 2015. Today, 125 million people are aged 80 years or older. By 2050, there will be almost this many (120 million) living in China alone, and 434 million people in this age group worldwide. By 2050, 80% of all older people will live in low- and middle-income countries [1].

Ukraine is characterized by the general ageing of the population. Due to the international standards the population is considered old if the proportion of people aged 65 and older is more than 7%. By January 1, 2016 Ukrainian population was 42,5 millions, the proportion of the population aged 15–64 was 68,9%, and aged 65 and over – 15,9% [2]. According to WHO, in 2016 the average life expectancy in Ukraine was 71,3 years [3]. According to the Global Age Watch Index 2050, the number of elderly people in Ukraine will exceed to 30% in 2050 [4].

Cardiovascular diseases (CVD) up to date remain a major cause of morbidity and mortality in Ukraine, which is unfavorable indicator of population health [2, 3]. CVD lead to great disability; the next decade figure, adjusted for disability years of life (DALY), will increase globally from 85 million DALY in 1990 to 150 million DALY in 2020, thus remaining the leading somatic cause of loss efficiency [4]. The frequency of comorbidity in Ukraine in patients aged over 60 years is  $\geq 3$  diseases in 63% of men and 64% women [3].

The mortality caused by cardiovascular diseases in Ukraine is 459,48 per 100 000 population (it is about 65,8%), it significantly higher than the corresponding figures in France (30,08 to 100 000

population), in Germany (75,09 to 100 000 population), in Poland (88,37 to 100 000 population) and in the UK (76,11 in 100 000 population). The contribution of coronary heart disease (CHD) and its complications is 71,1% that takes one of the leading places in Europe [2, 3]. The prevalence of hypertension (HT) increases progressively with age and averages 80% at age 80 [5]. The results of meta-analysis of several studies (SHEP, Syst-Eur, Syst-China) concluded that effective treatment of elderly patients with hypertension reduces the risk of stroke by 30%, cardiovascular mortality by 16%, total mortality by 13% [5]. However, the features of this treatment in old patients is a difficult question.

According to WHO, more than three quarters of all deaths from CVD can be avoided through lifestyle modifications. Prevention is an important task for the population as a whole, the basic principles of which are based on the results of clinical epidemiology and evidence-based medicine [3]. But the necessity of CVD prevention in old people and its features remain not clear.

**The objective:** to found out the features of prevention and management of cardiovascular diseases in old people.

## MATERIALS AND METHODS

A systematic analysis of available 67 literature sources and guidelines about management of cardiovascular diseases in old people founded in JAMA, Scholar, NCBI, Cochrane Library and PubMed databases for the 2007–2017 with keywords related to the aim was conducted.

## RESULTS AND DISCUSSION

Results of Freming's studies show that the risk of cardiovascular events (coronary heart disease, including myocardial infarction, stroke, heart failure, peripheral artery atherosclerosis) have a close relationship with blood pressure level in people of all ages, especially with the level of systolic blood pressure [7]. Hard vascular wall, reducing activity of the renin-angiotensin-aldosterone system and lower density of adrenoreceptors at vessels lead to the so-called isolated systolic hypertension in the elderly. Moreover, the systolic blood pressure (SBP)  $>140$  mmHg and diastolic (DBP) is within normal limits [6].

Until recently, the question of the need of antihypertensive drugs in patients with hypertension aged 80 years and older was the subject of debate, but now there is the evidence that antihypertensive treatment in this category of patients accompanied by favourable changes in cardiovascular prognosis. Due to the frequent variations in blood pressure and more frequent episodes of hypotension, the determination of the target of blood pressure should be individualized for each patient [6].

In 2013, the recommendations for the treatment of elderly patients with hypertension and correction of hypercholesterolemia presented the European Society of Cardiology (ESC / ESH) [8]. In the same year the guidelines of the American Heart Association (AHA) and American College of Cardiology (ACC) with recommendations for correction of high cholesterol were published [9]. In 2014 the recommendations of the American Association of Diabetes (ADA) [10, 11] and British NICE guidelines [12] for the use of statins in old patients with type 2 diabetes were announced. According to current guidelines, it is adjusted that the prevention and treatment of old people have to be directed to decrease of influence of all risk factors.

Table 1

Health care of old patients with hypertension and dyslipidemia according to Ukrainian and international recommendations

Recommendations	Hypertension	The use of statins
Ukrainian recommendations	Treatment starts with monotherapy in low dose, if necessary gradually increase over several weeks; Individual selection of antihypertensive drugs with consideration all the associated diseases; It is necessary to prefer long-acting drugs; Do not use products that cause orthostatic hypotension and cognitive violations ( $\alpha$ -blockers and central $\alpha$ -2-adrenergic agonists) [13, 14].	Target levels of total and LDL cholesterol in the blood to <4,5 mmol/L (175 mg/dl) and <2,5 mmol/L (100 mg/dL). All patients with hypertension with established CVD or diabetes type 2 should receive statin therapy, as the same as younger patients (I, B). Patients with hypertension and high cardiovascular risk (> 20% over the next 10 years) should receive statins, even if the level of total cholesterol or LDL have not increased [14]. Elderly patients without CVD can be prescribed statins in the presence of another risk factor other than age (IIb, B) [15]. Prescribe statins to the maximum recommended or maximum tolerated doses to achieve target levels (I, A) [14]. Statins do not prescribe to patients whose levels of ALT and / or AST three times the upper limit of normal [15].
European recommendations (ESC/ESH; NICE)	Elderly and senile level of SBP $\geq$ 160 mmHg reduce the level of 140-150 mm Hg (I, A); Patients <80 years of age who are in satisfactory condition, treatment can be given in the SBP $\geq$ 140 mm Hg and target levels of SBP <140 mm Hg, provided good transfer therapy (IIb, C); Patients >80 years with initial SBP $\geq$ 160 mm Hg recommended to reduce SBP 140-150 mm Hg, provided that they are in good condition (I, B); In debilitated patients elderly is recommended to leave the decision to continue antihypertensive therapy at the discretion of the attending physician (I, C); When a patient receiving antihypertensive therapy is 80 years, it makes sense to continue this treatment if it is well tolerated (IIa, C). Patients elderly can be used any antihypertensive drugs (I, A) [8].	Targeted lowering cholesterol to <1,8 mmol/L (70 mg/dL) or >50% from baseline (I, A). Appointment of statins in patients with hypertension with medium and high cardiovascular risk, moreover - target value of LDL <3,0 mmol/L (<115 mg/dL) (I, A) [8]. If the 10-year CVD risk of >10% for primary prevention is recommended 20 mg of atorvastatin. For secondary prevention - 80 mg of atorvastatin. [12].
American recommendations (AHA; ACC; ADA)	1. Treatment of hypertension with a SBP treatment goal of less than 130 mm Hg is recommended for noninstitutionalized ambulatory community dwelling adults ( $\geq$ 65 years of age) with an average SBP of 130 mm Hg or higher (I, A). 2. For older adults ( $\geq$ 65 years of age) with hypertension and a high burden of comorbidity and limited life expectancy, clinical judgment, patient preference, and a team-based approach to assess risk/benefit is reasonable for decisions regarding intensity of blood pressure lowering and choice of antihypertensive drugs. (IIa, C-EO) [16-17].	Statins for the primary prevention show for all high-risk patients and all patients for secondary prevention available without CH II-IV NYHA and without dialysis [9]. Statins therapy reduces the risk of cardiovascular disease at initial levels of LDL >1,8 mmol/L (70 mg/dL) in all patients with and without existing CVD [10]. In patients with or without clinically significant cardiovascular disease older than 40 years if at least one risk factor or with diabetes without clinically significant cardiovascular disease aged less than 40 years if LDL levels >2,5 mmol/L (100 mg/dL) or there are several risk factors are assigned statins [11].

According to new AHA Recommendations for Treatment of Hypertension in older people (2017, USA) the treatment of hypertension is recommended for noninstitutionalized ambulatory community dwelling adults ( $\geq$ 65 years of age) with an average SBP of 130 mm Hg or higher (I, A) with a SBP treatment goal of less than 130 mm Hg. For older adults ( $\geq$ 65 years of age) with hypertension and high comorbidity with limited life expectancy, the decision regarding intensity of BP lowering therapy and choice of antihypertensive drugs (IIa, C-EO) is based on clinical judgment, patient preference, and team-based approach with assessment of its risk/benefit [16, 17].

Unfortunately, at present Ukraine doesn't have specific protocols for the treatment of old patients. However, certain emphases can be identified in National Unified clinical protocols of primary and secondary (specialized) medical care for hypertension, CVD and dyslipidemia [13, 14].

The comparative table of European, American and Ukrainian recommendations for care of old patients with hypertension and dyslipidemia in old patients is presented below (Table 1).

### CONCLUSION

In accordance with a recent World Health Resolution (67/13), a comprehensive Global Strategy and Action Plan on Ageing and Health were developed by WHO in consultation with Member States and other partners. The Strategy and Action Plan announced the necessity of aligning health systems with the needs of older populations. Health systems need to be better organized around older people's needs and preferences, designed to enhance older people's intrinsic capacity, and integrated across settings and care providers. Actions in this area and guidelines of care are really needed. It is necessary to develop more clear guidelines for care of old people, especially in prevention and management of cardio-vascular diseases.

**Профилактика сердечно-сосудистых заболеваний у пациентов старческого возраста – состояние проблемы**

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В настоящее время ВОЗ уделяет большое внимание проблеме старения и здоровья.

**Цель исследования:** выяснить особенности профилактики и лечения сердечно-сосудистых заболеваний у людей старческого возраста.

**Материалы и методы.** Проведен систематический анализ 67 источников литературы и рекомендаций по лечению сердечно-сосудистых заболеваний у людей старческого возраста, найденных в базах данных JAMA, Scholar, NCBI, Cochrane Library и PubMed за 2007–2017 годы по ключевым словам согласно цели.

**Результаты.** В европейских и американских руководствах есть рекомендации по уходу за людьми старческого возраста. К сожалению, в настоящее время в Украине нет конкретных протоколов лечения пожилых пациентов. Тем не менее, определенные аспекты имеются в Национальных унифицированных клинических протоколах первичной и вторичной (специализированной) медицинской помощи при гипертонии, сердечно-сосудистых заболеваниях и дислипидемиях.

**Заключение.** В соответствии с Глобальной стратегией и Планом действий ВОЗ необходимо разработать более четкие руководящие принципы ухода за пожилыми людьми, особенно в области профилактики и лечения сердечно-сосудистых заболеваний.

**Ключевые слова:** люди старческого возраста, сердечно-сосудистые заболевания, профилактические рекомендации.

**Профілактика серцево-судинних захворювань у літніх пацієнтів – стан проблеми**

**В.І. Ткаченко, Я.А. Максимець**

На сьогодні ВООЗ приділяє велику увагу проблемі старіння та здоров'я.

**Мета дослідження:** з'ясувати особливості профілактики та лікування серцево-судинних захворювань у літніх людей.

**Матеріали та методи.** Здійснено систематичний аналіз 67 доступних джерел літератури та керівництв щодо лікування серцево-судинних захворювань у людей літнього віку, знайдених у базах даних JAMA, Scholar, NCBI, Cochrane Library та PubMed за 2007–2017 роки за ключовими словами відповідно до мети.

**Результати.** Європейські та американські керівництва мають рекомендації щодо догляду за літніми людьми. На жаль, сьогодні в Україні немає спеціальних протоколів для лікування літніх пацієнтів. Однак певні аспекти можна визначити в національних уніфікованих клінічних протоколах первинної та вторинної (спеціалізованої) медичної допомоги при гіпертонії, серцево-судинних захворюваннях та дисліпідемії.

**Заключення.** Відповідно до Глобальної стратегії та Плану дій ВООЗ необхідно розробити більш чіткі керівні принципи щодо піклування за людьми літнього віку, особливо щодо запобігання та лікування серцево-судинних захворювань.

**Ключові слова:** люди літнього віку, серцево-судинні захворювання, профілактичні рекомендації.

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