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j1106-001

Davydenko O.N., Myronyk O.V., Sydorчук A.S.
**CLINICAL EFFICACY OF THE DRUG "HEPADIF" IN COMPLEX
TREATMENT OF PATIENTS WITH CHRONIC HEPATITIS C**

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**КЛІНІЧНА ЕФЕКТИВНІСТЬ ЗАСТОСУВАННЯ ПРЕПАРАТУ
„ГЕПАДИФ” В КОМПЛЕКСНОМУ ЛІКУВАННІ ХВОРИХ НА
ХРОНІЧНИЙ ГЕПАТИТ С**

Abstract. In this paper we describe the clinical efficacy of "Hepadif" in holiatry of patients with chronic viral hepatitis C.

Key words: chronic hepatitis C, treatment, clinical effectiveness, alaninaminotransferase (ALAT) level.

Анотація. В роботі доведена ефективність препарату «Гепадиф» в комплексному лікуванні хворих на хронічний гепатит С.

Ключові слова. Хронічний гепатит С, лікування, клінічна ефективність, аланін амінотрансфераза.

Introduction.

Actually relevant and unresolved problem is the treatment of chronic viral hepatitis. In Ukraine the incidence of chronic hepatitis has increased in 2 times [3, 4]. According to WHO, about 1% of world population are infected with hepatitis C virus [1, 2].

Chronic hepatitis C occur in varying degrees, accompanied with violations of metabolic processes [5]. The disruption of protein synthesis leads to changes in the amino acid composition of the blood, disorders of the processes of neutralization of ammonia and coagulation. Inflammatory and necrotic processes in the liver accompanied by impairment of lipid peroxidation, decreased antioxidant resources, resulting in damaged membrane of hepatocyte [8]. All this necessitates the inclusion of medications in the comprehensive treatment of patients with chronic hepatitis C.

One such remedy is the "Hepadif". This combination drug, which is caused by complex influence of the components included in its composition. Stimulates the metabolism of fat components of the β -oxidative transformation of free fatty acids in the mitochondria of hepatocytes, biosynthetic processes, prevents necrosis of hepatocytes, normalize the process of proliferation of hepatocytes, the liver enzyme system and restores normal liver function [6].

The presence of adenosine, which is a component of coenzymes, nucleic acids, provides the regulation of hematopoiesis. B vitamins (cyanocobalamin, riboflavin, pyridoxine) regulate the redox processes involved in protein, fat and carbohydrate metabolism, in the metabolism of tryptophan, methionine, cysteine, glutamic acid and other amino acids. Pyridoxine promotes the normalization of lipid metabolism. Cyanocobalamin is involved in the process transmetilirovania, hydrogen transfer, the formation of methionine, nucleic acids, choline, creatine. Carnitine promotes the breakdown of long-chain fatty acids and the substitution of fatty acid metabolic shunt



of carbohydrate, improves digestion. Antitoxic fraction liver extract antitoxic is the purified extract of the liver and has anti-toxic effect [7].

Main text.

The purpose of the study. To study the clinical efficiency "Hepadif" in complex treatment of patients with chronic hepatitis C.

Materials and methods. The investigation included 43 patients with chronic hepatitis C, moderate severity course of 25-55 years. Males was 18, female – 25. Single-blind method, all patients randomized into two groups. Patients received basic therapy. Patients of the main group received "Hepadif" intravenously at the rate of 8,625 mg/kg body mass – contents of 1 vial of the drug is dissolved in 400-500 ml of 5% glucose solution for 5 days followed by administration of 2 capsules 2 times a day, regardless of meals during the month. Patients in the control group received Essenciale® Forte N 2 capsules 3 times a day. All patients underwent complex clinical and laboratory examination and estimation of the functional state of the liver.

The data were analyzed statistically: the arithmetic mean was calculated and its error. The average difference between study groups was assessed using unpaired bilateral Student test.

The results of the study and their discussion. Under the influence of complex treatment with use of the drug "Hepadif" noted positive dynamics of clinical symptoms. So, on the 11th day of treatment complaints of general weakness showed 31.5% of patients of the main group, decrease in appetite in 32%, nausea – 15,8%, a feeling of heaviness in the epigastrium and right hypochondrium is 24.2%.

At the end of treatment nausea and a feeling of heaviness had not said no patient, while 12.3% of patients in the control group, these symptoms persisted.

Under the influence of treatment significantly improved indicators of total bilirubin in both groups (table. 1).

Table 1.

Dynamics of biochemical parameters of blood in patients in chronic hepatitis C (M±m)

Parameter	Basic group		Control group	
	Before treatment	After treatment	Before treatment	After treatment
Bilirubinum, mkmol/l	34,2±1,8	17,8±1,6*	31,7±1,9	19,6±1,8*
ALAT, mmol/(l/hour)	1,2±0,3	0,64±0,13*	1,08±0,3	0,75±0,12
Alkaline phosphatase, IU	298,6±12,4	175,8±11,6*	302,3±12,7	338,5±12,1* **
Tymol test, UA	6,4±0,8	5,3±0,6	6,3±0,7	5,4±0,6
Albuminum, g/l	51,7±4,2	52,3±4,2	53,4±4,4	54,1±4,2

Note: *- $P \leq 0,05$ in patients before and after treatment

** - $P \leq 0,05$ after treatment in basic and control groups



Summary and Conclusions.

We were considered the inclusion of "Hepadif" into holiatry of chronic hepatitis C independently of gender. Dynamics of activity of ALAT and alkaline phosphatase were significantly positive in patients receiving "Hepadif". It should be noted that the normalization of biochemical parameters was faster in the main group of patients. As for the indicators of cholestasis, patients of the control group dynamics of alkaline phosphatase was significantly negative.

Thus, the present study demonstrated that the use of the drug "Hepadif" likely contributes to the improvement of biochemical parameters of blood, reduction of pathological processes in the liver, a more rapid regression of clinical symptoms.

References

1. Alter M.J. Guidelines for laboratory testing and result reporting of antibody to hepatitis C virus. Centers for Disease Control and Prevention / M.J. Alter, W.L. Kuhnert, L. Finelli // *MMWR Recomm. Rep.* – 2003. – Vol. 52(RR-3). – P. 1-13.
2. Amon J.J., Garfein R.S., Ahdieh-Grant L. Prevalence of hepatitis C virus infection among injection drug users in the United States, 1994-2004. / J.J. Amon, R.S. Garfein, L. Ahdieh-Grant // *Clin. Infect. Dis.* – 2008. – Vol. 46 (12). – P. 1852-1858.
3. Fadeenko G.D., Kravchenko N.A., Vynogradova S.V. Svyaz` genetycheskyh faktorov s progressyrovanyem fybroza pecheny pry vyirusnyh gepatytah B y C// *Suchasna gastroenterologiya.* – 2006. – № 6 (32). – S.82-87.
4. Golubchykov M.V. Statystychnyj oglyad zaxvoryuvanosti naselelnya Ukrayiny na xvoroby pechinky ta zhovchovy vidnyx shlyaxiv// *Suchasna gastroenterologiya i gematologiya.* – 2000. – № 2. – S. 53-55.
5. Moskaliuk V.D., Balaniuk I.V., Sydorhuk A.S., Randiuk Y.O. Klitynna reaktyvnyst' i riven adaptatsyynogo napruzheniya u hvoryh z hronichnym virusnym hepatytom C / V.D. Moskaliuk, I.V. Balaniuk, A.S. Sydorhuk, Y.O. Randiuk // *Infektsyini hvoroby.* – 2016. – № 3 (85). – S. 33-37.
6. Perederyj V.G. Lechyt` yly ne lechyt pacyentov s xronycheskym virusnym gepatytom C, kotorym ne pokazana terapiya ynterferonom?// *Suchasna gastroenterologiya.* – 2001. – № 1 (3). – S. 60-63.
7. Perederyj V.G., Chernyavskij V.V., Shypulyn V.P. Sravnytel`naya efektyvnost` pryomeneniya gepatoprotektorov pry chronycheskyx dyffuznyh zabolevanyyah pecheny`// *Suchasna gastroenterologiya.* –2008.– №3 (41). – S.81-83.
8. Sherlock S., Dooley J. *Diseases of the Liver and Biliary system*// Tent. edition. – 1997. – P. 385-400.

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Butyrsky A.G., Butyrskaya I.B.
HISTOCHEMICAL RATIONALE OF BIOGRAFTS USING FOR LEG
VENOUS ULCERS TREATMENT

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ГИСТОХИМИЧЕСКОЕ ОБОСНОВАНИЕ ИСПОЛЬЗОВАНИЯ
БИОТРАНСПЛАНТАТОВ В ЛЕЧЕНИИ ВЕНОЗНЫХ ЯЗВ ГОЛЕНИ

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Abstract. In this paper we describe the use of semipermeable biogenic grafts prepared of mollusc envelope for post-thrombosis leg ulcers management, and histochemical substantiation of their use. On the clinical material (66 patients) one traces stages of morphofunctional maturity of tissues forming in treatment by own method. Histochemical investigation was done for ulcers borders and granulation tissue from ulcer bottom been taken before treatment and on the 3rd, 7th, 15th, and 30th day. Methods: PAS-reaction with differentiation in saliva solution within 60 min in 37°C, staining acid glycosaminoglycans by toluidine blue in pH 2,8, quantitative content of RNA in fibroblasts stained by gallocyanin-chrome alum by Einarson. Authors confirms the idea about development of trophic ulcers as autoimmune process. As a base of proposed method the author considers a property of the graft to change conditions of regeneration that improves results of ulcers management.

Key words: chronic venous insufficiency, trophic ulcers, treatment, biological semipermeable membranes, histochemistry

Аннотация. В работе рассматриваются результаты лечения больных с посттромботическими язвами голени с помощью полупроницаемых биологических мембран, приготовленных из оболочки моллюска, и гистохимическое обоснование их применения. На клиническом материале прослеживаются этапы морфофункциональной зрелости тканей, образующихся при лечении предложенным методом. Используемые методики гистохимической идентификации целиком отвечают поставленным целям, результаты дают полную картину хода процессов в язве. На основании полученных данных подтверждается мысль о развитии трофических язв на основе аутоиммунного процесса и новых условиях созревания эпителиально-соединительнотканного регенерата под действием полупроницаемых мембран.

Ключевые слова: хроническая венозная недостаточность, трофические язвы, лечение, биологические полупроницаемые мембраны, гистохимия

Venous trophic ulcers (TU) occur in 90% of patients endured deep venous thrombosis (DVT) [6]. TU are the most frequently occurring type of chronic wound, accounting for 80-90% of all lower extremity ulcers [1]. In the US, TU cause the loss of two million work days per year [4]. Conservative and cost-effective management of TU is possible and can heal many wounds when implemented in a consistent



manner across a continuum of care [5]. Many healthcare providers, however, lack the necessary knowledge and training to treat TU efficiently [2, 3]. Till nowadays they acquired the great experience of using different methods of non-surgical treatment of TU including plastic materials of xenogenic origin [2, 4] that testifies to perspectives for treatment of TU.

The purpose of investigation: fundamental substantiation of graft properties to stimulate regeneration in TU.

Material, and methods. We treated 66 patients after endured DVT. 33 patients been treated with biografts [6] made the main group. Control group included 33 patients been treated by usual technology. Patients' age was 55 to 85 yrs in both groups. Bandages with biografts were changed 2-3 times a week. Histochemical investigation was done for ulcers borders (2-3 fragments from different places) and granulation tissue (GT) from ulcer bottom. We took biopsy before treatment and on the 3d, 7th, 15th and 30th days. Slices were fixed in 10% neutral formalin; sections were done by usual methods. We used PAS-reaction with differentiation in saliva solution within 60 min in 37°C, differentiation of acid glycosaminoglycans by toluidine blue in pH 2,8, quantitative content of RNA in fibroblasts stained with gallocyanin-chrome alum by Einarson. RNA granules count was made by histostereometry with Avtandilov's screen in minimally 40 fields of view to provide representativeness. Statistics was provided on PC with MS Excel statistical programs.

Results. Result of PAS-reaction and revealing metachromasia after staining with toluidine blue in the control group testifies to presence of stable disproteinosis in interstitial substance of TU that confirms autoimmune mechanism of this phenomenon. Before treatment as well as in the early period after start of treatment in the walls of TU and stroma of GT one reveals concentration of PAS-positive substances and insignificant amount of metachromatic substances that testifies to absence of final maturity of GT. Day by day, particularly by the 30th day, concentration of PAS-positive substances is decreased but metachromasia with toluidine blue remains obviously manifested that testifies to the tendency of accomplishment of plastic processes in regenerate, but phenomena of disproteinosis characteristic for diseases with immune component of development is preserved.

Incompleteness of plastic processes by the 30th day is confirmed by absence of RNA content to initial parameters or if only tendency to its decrease (table 1) that testifies to continuing process of GT maturing, manifestation of chronic productive inflammation within treatment period that takes place in spite of positive clinical efficiency. Thus, histochemical results confirm presence of rough trophic disorders in TU been removed by traditional methods of treatment very slowly due to perverted regeneration caused most likely by autoimmune nature of TU.

Histochemical results in the main group demonstrate same reactive-inflammatory changes in biopats of TU dependent on local disorders of homeostasis due to adaptation to new conditions; but their quantitative manifestation is differed to decrease. Metachromatic and PAS-positive substances concentrated in swollen fibers, basic substance.

Day-by-day one discovers increase of PAS-positive substances (including glycogen), certain decrease of metachromatic substances. It testifies to intensification



of metabolism in cells, increased vascularization, replacement of sial acids and chondroitin-sulfate by hyaluronic acid that in its turn means occurrence of new level of connective tissues maturing. Besides, fragmentation, and swelling of collagen fibers is decreased that's associated with accumulation of PAS-positive substances. Gradually as GT matures and TU are epithelized intensity of metabolism in biopats is decreased that's revealed by decrease of glycogen amount and glycosaminoglycans (metachromatic substances in GT). Such dynamics of cellular metabolism is combines with inhibition of cells protein-producing function that's manifested by content of RNA in tissues of TU: its parameters initially were actively increased been associated with increase of regenerative potential but after the 15th day one notified the tendency of inhibition (table 1). It testifies to inhibition of reparative-restorative processes in healing TU. This correlates with clinical results when velocity of TU healing is decreased before the end of treatment.

Table 1

Dynamics of RNA content in tissues of TU within treatment

	Terms of observation				
	Before treatment	3 rd day	7 th day	15 th day	30 th day
Main group (n=33)	3.64±0.25	6.23±0.47	8.26±0.56	9.61±0.48	8.72±0.43
Control group (n=33)	3.64±0.25	5.16±0.31	6.88±0.67	7.21±0.42	8.91±0.34
			p<0.05	p<0.05	

Discussion. Morphohistochemical characteristics of biopats demonstrate venous TU as a disease with autoimmune mechanism of occurrence. Interstitial tissue has shown disproteinosis been revealed by PAS-reaction, it confirms presence of immune component. This affirmation does not coincide with opinions of some authors [4, 5] who assess TU as an autoimmune disease. We think immune component is present within process of development but exercises no influence on TU appearance. We suppose defects of cellular and humoral immunity taking place in venous skin ulcers after endured DVT [5] have secondary character.

Circulatory changes in tissues of TU associated with inflammatory component increase tissue hypoxia, slow and pervert healing. It's confirmed by slow dynamics of RNA content within 7th to 15th day reflecting protein-producing function of regenerating tissues and their decreased plastic properties. Essential difference of biografts using is earlier and more intensive regeneration of epithelial and connective tissue elements associated with increased activity of fibroblasts confirming by 1,2-1,2 increase of RNA content in comparison with control group. Biograft is not only a carcass for future healing, it promotes congestion of nucleic acids and intensification of regeneration. As a whole, decrease of exudative and circulatory disorders in the main group characterize activated reparative processes in TU in early terms, they remain stable till final epithelization. Against the background of minimal inflammatory-dystrophic and circulatory changes the loose scar is formed and proliferated with regenerating elements more intensively.

Thus, biografts do not cause inflammatory-allergic changes; moreover, they decrease the level of dysproteinosis exercising local immunomodulating influence,



prevent occurrence of rough excessive scar. Principally new property of biografts is stimulation of healing in tissues they cover. Actually biografts provide new conditions for the regeneration in TU that's associated with change of pace and quality of maturing, and differentiation of epithelial and connective tissue regenerate.

References.

1. Burton C. Venous ulcers. American Journal of Surgery. 1994 (167) (suppl.), 37-40.
2. McGuckin M, Kerstein M Venous leg ulcers and the family physician. Advances in Wound Care. 1998 11, 7, 344- 346.
3. Moffatt CJ et al Community clinics for leg ulcers and impact on healing. British Medical Journal. 1992 5, 305 (6866), 1389-1392.
4. Onegnae K, Phillips T Leg ulcer management. Emergency Medicine. 1993 25, 45-53.
5. Zink M et al (1992) Lower extremity ulcers. In Bryand R (Ed) Acute and Chronic Wounds. Nursing
6. Butyrsky A, Tatarchuk P Efficacy of semipermeable biogenic membranes in leg trophic ulcers management at post-thrombotic disease. Phlebologia. 2012 6(2), 93-94.



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THE EFFECT OF THE VITAMINE D PREPARATIONS ON THE OUTCOMES OF MYOCARDIAL INFARCTION IN PATIENTS WITH TYPE 2 DIABETES, OSTEOPOROSIS OR OSTEOPENIA*Kuban State Medical University,
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ВЛИЯНИЕ ПРЕПАРАТОВ ВИТАМИНА Д НА ИСХОДЫ ИНФАРКТА МИОКАРДА У БОЛЬНЫХ САХАРНЫМ ДИАБЕТОМ 2 ТИПА И ОСТЕОПОРОЗОМ ИЛИ ОСТЕОПЕНИЕЙ*Кубанский государственный медицинский университет,
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Abstract. Cardiovascular diseases, diabetes and osteoporosis are listed among serious diseases (besides cancerous diseases) associated with high mortality rate and disability of the population. The development of myocardial infarctions is noted to be associated with osteoporosis related fractures. Lower hip-bone density is more likely to cause myocardial infarction than any other risk factors of the cardiovascular diseases. Type 2 diabetes is considered to be the risk factor of osteoporosis causing the increased incidence of hip fractures both in men and in women. Vitamin D analogues contribute to the bone tissue remodeling; stimulate the muscular function and neuromuscular coordination, and produce immunomodulatory and anticytokinin action. These features of vitamin D analogues allow administering them to patients with associated pathology.

Key words: osteoporosis, osteomalacia, type 2 diabetes, myocardial infarction, vitamin D, alphacalcidol.

Аннотация. Сердечно-сосудистые заболевания, сахарный диабет и остеопороз входят в первую четверку (помимо онкологических заболеваний) социально значимых заболеваний, приводящих к наибольшему числу летальных исходов и инвалидизации населения. Существует ассоциация между развитием инфаркта миокарда и остеопоротическими переломами. При снижении минеральной плотности костной ткани в области шейки бедренной кости отмечается повышенный риск развития инфаркта миокарда независимо от других факторов риска сердечно-сосудистых заболеваний. Сахарный диабет 2 типа также относится к числу заболеваний, увеличивающих риск развития остеопороза, повышая частоту переломов бедра как у мужчин, так и у женщин. Аналоги витамина D положительно влияют на процессы ремоделирования костной ткани, на функции мышц и нейромышечную координацию, оказывают иммуномодулирующий и антицитокиновый эффекты, что оправдывает их применение у пациентов с сочетанной патологией.

Ключевые слова: остеопороз, остеомалация, сахарный диабет 2 типа, инфаркт миокарда, витамин Д, альфакальцидол.



Cardiovascular diseases, diabetes and osteoporosis are among serious diseases (besides cancerous diseases) associated with high mortality rate and disability of the population.

Osteoporosis is the disease of the skeleton that is characterized by the lower bone density and its deterioration. This process results in bone fragility and fractures. The diagnosis is made on the basis of quantitative methods of assessing bony tissue mineralization as the main factor of its density. Clinical importance of osteoporosis attributes to the development of low-energy fractures, which determine the severity of the disease causing the disability and even death of the patients. Compression fractures of the vertebrae of the spine, the hip fractures, the fractures of the distal part of the forearm and proximal humerus are typical pathologies in osteoporosis [1]. Osteoporosis related hip fractures usually require long-term nursing-home care. Rehabilitation is slow and the patients may not regain the pre-fracture level of function. Compression fractures of the vertebrae of the spine are more frequent and can develop spontaneously. Painful syndrome, loss of height, kyphosis, and damage to movement and function of some inner organs (heavy breathing, lower back pain and pain in the heart area due to the compression of the nerves branching from the spine as well as digestive disorders) are typical symptoms of compression spine fractures. High incidence of recurrent compression spine fractures increases disability among patients.

Osteoporosis is a widely spread disease. Careful study of the Russian population carried out by the Research Institute of Rheumatology of the Academy of Science of the Russian Federation revealed osteoporosis in one out of every three women and in one out of every four men at the age over 50. At the same time more than estimated 40% of any genders have the signs of osteopenia. Thus osteoporosis affects an estimated 14 million people in Russia (10% of the total population). According to these data 34 million people are at high risk of osteoporosis fractures. Similar findings of osteoporosis incidence have been noted among white women in North America and West Europe [2]. Osteoporosis fractures have negative physical, psychological, economic and social effects causing decreased quality of life. Besides, once a patient has experienced an osteoporosis fracture he or she is at high risk of suffering a new fracture in the following years. Thus vicious circle forms aggravating quality of life and increasing morbidity and mortality rate [3]. In 1990 1,7 million osteoporosis hip fractures were registered all over the world. Considering population growth rate and increased lifespan we may predict the rise of such pathology up to 6,3 million [4]. That is why WHO considers osteoporosis a primary health problem and has called for developing effective preventive and therapeutic strategies.

According to a number of surveys [5,6], spine fractures can be the precursors of the total mortality and can double the risk of cardiac deaths. Lower bone mass is a special risk factor of cardiac mortality among elderly people. This factor plays more important role in cardiac problems than the level of blood pressure or blood cholesterol level [7]. In fact patients with cardiovascular diseases are considered to be at high risk of osteoporosis as compared to normal ones [6].

There is the association between myocardial infarctions and osteoporosis fractures [8]. Lower hip-bone density is more likely to cause myocardial infarctions



than in any other risk factors of cardiac diseases (smoking, hypertension, triglyceridemia, diabetes mellitus) [9]. Diabetes mellitus is regarded as the most urgent international medical and social problem. This disease is a part of the priorities of all national health systems and it is supported by WHO standard acts.

4,300,295 people with confirmed diabetes have been registered in the Russian Federation by January, 1 2016. The incidence of the disease during 2000-2015 totaled 2,2 million people. In fact the incidence of diabetes may double the registered cases.

Diabetes has become cost burden not only for patients and their families but for national health systems as well. Direct annual health-care economic costs for one patient, including the treatment of the complications, amount to more than 70,000 roubles [10].

Type 2 diabetes increases the risk of osteoporosis. It also increases the incidence of hip fractures both in men and women [2]. Marked decrease in mineralization of the bone tissue has been revealed in patients with type 2 diabetes in the presence of epithelial dysfunction [11].

Type 2 diabetes is characterized by a long-term insulin resistance, compensatory hyperinsulinemia and hyperglycemia of various degrees which are associated with the high risk of cardiovascular complications and development of microvascular disorders before the diabetes is detected. Cardiovascular diseases, coronary heart disease in particular are the main causes of death among patients with diabetes. According to the national surveys of diabetes the incidence of angina pectoris on exertion in Russia accounts for 12.9% and 14.5% among the patients with type 1 and type 2 diabetes respectively. Estimated 2.8% and 3.8% patients with type 1 and type 2 diabetes respectively have suffered myocardial infarctions. By his investigation Framgeim proved that the risk of cardiac diseases is 2-3 times higher in men and 3-5 times higher in women with diabetes as compared to people with normal carbohydrate metabolism.

Researches that have been carried out for last two decades made it possible to learn more about the role of Vitamin D in physiological conditions as well as in different human pathologies. Vitamin D promotes active absorption of calcium in the intestines and its adequate distribution throughout the body. It is very important for the remodeling of the bony tissue, for the proper function of the CNS as well as for the work of other organs. Normal level of Vitamin D is found only in women in menopause. Progressive reduction in the Vitamin D level is noted in elderly women: moderate level (43%), critically low level (22%). Elderly people who have suffered hip fractures are diagnosed Vitamin D deficit (92%). Administration of the active Vitamin D metabolites results in normal calcium and phosphorus homeostasis, improves the processes of bone remodeling and resorption. These preparations also activate the processes of bone mineralization; improve neuromuscular transmission and muscular function [1].

Detection of cases of Vitamin D insufficiency helped to regard them as pathogenic factors not only of skeletal disorders and disturbance of bone remodeling processes, but also as risk factor of a number of common heterotopic chronic diseases. Lower Vitamin D level has been proved to result in insulin resistance and to reduce the secretion of insulin [12]. Intake of Vitamin D preparation on the contrary



improves the level of blood glucose and insulin. In 2012 Ataie-Jafari [13] demonstrated ability of alphacalcidol to preserve the function of β -cells in the pancreas of patients with diabetes.

Receptors for vitamin D are found practically in all cells of the cardiovascular system (smooth cells of the blood vessels, endothelial cells, and cardiac hystiocyte). Lower level of 25-hydroxy-vitamin D as the risk factor of myocardial infarction in men was investigated in 2008. It was stated that the level of this preparation must be not less than 30ng/ml to reduce the risk of myocardial infarction [14].

Some authors reported that the intake of active forms of vitamin D increases muscular mass and muscular power [15,16,], improves cognitive function, decreases tendency to fall and controls painful syndrome [17,18].

Vitamin D analogues favorably affect the bony tissue remodeling as well as micro architectonics of the bone. According to the findings of investigation of osteoporosis these preparations are more effective in preventing bone mass loss, in reducing the incidence of hip and spine fractures than any food additives with vitamin D. Vitamin D analogues hamper resorption of the bony tissue of the vertebrae and other parts of the spine as well. The preparation possesses special properties to stimulate both muscular function and neuromuscular coordination, and thus reduces the incidence of falls and fractures. This mere fact constitutes the main difference between active forms of vitamin D and all other pharmacological preparations administered for the treatment of osteoporosis. These preparations have established immunomodulatory and anticytokin effects, and so they can be administered to the patients with associated pathology [19].

As there is little information in the literature available about the effectiveness of native and active forms of vitamin D in patients with myocardial infarction due to diabetes, osteoporosis or osteopenia further investigations in this field are essential to justify the administration of Vitamin D preparations in this group of patients in order to improve the course and outcome of the diseases, to reduce the incidence of complications of myocardial infarctions, to shorten the time of rehabilitation and to improve the quality of their life.

References:

1. А.В. Пашенцева, А.Ф. Вербовой, О.В. Косарева, Л.А. Шаронова. Современные возможности терапии остеопороза. // Фарматека №5 (318) 2016г. С.22 – 29.
2. О.М. Лесняк, Л.И. Беневоленской. Остеопороз – 2-е изд., перераб. и доп. – М.: ГЭОТАР-Медиа, 2009. 272с. – (Серия «Клинические рекомендации»).
3. Дэвид М. Рэйд. Справочник по остеопорозу. М.: Практическая медицина, 2015. – 128с.
4. World Health Organization (WHO)/ Prevention and management of osteoporosis, report of a WHO scientific group. WHO Technical Report Series 921. Geneva: WHO, 2003.
5. Debby den Uy, Mike T Nurmohamed, Lilian HD van Tuyl, Hennie G Raterman, Willem F Lems. (Sub)clinical cardiovascular disease is associated with increased bone loss and fracture risk; a systematic review of the association between



cardiovascular disease and osteoporosis. den Uyl et al. *Arthritis Research & Therapy* 2011, 13:R5.

6. Sy-Jou Chen, Chin-Sheng Lin, PhD, Cheng-Li Lin, and Chia-Hung Kao. Osteoporosis Is Associated With High Risk for Coronary Heart Disease. *Medicine* Volume 94, Number 27, July 2015.

7. László B Tankó, Claus Christiansen, David A Cox, Mary Jane Geiger, Michelle A McNabb, Steven R Cummings. Relationship Between Osteoporosis and Cardiovascular Disease in Postmenopausal Women. *Journal of bone and mineral research*. Volume 20, Number 11, 2005. 1912 – 1920.

8. Yariv Gerber, L. Joseph Melton, Susan A. Weston, Véronique L. Roger. Osteoporotic Fractures and Heart Failure in the Community. *Am J Med*. 2011 May ; 124(5): 418–425. doi:10.1016/j.amjmed.2010.11.029.

9. Wiklund P, Nordström A, Jansson JH, Weinehall L, Nordström P. Low bone mineral density is associated with increased risk for myocardial infarction in men and women. // *Osteoporos Int*. 2012 Mar;23(3):963-70. doi: 10.1007/s00198-011-1631-0.

10. Дедов И.И., Омельяновский В.В., Шестакова М.В., Авксентьева М.В., Игнатъева В.И. Сахарный диабет как экономическая проблема в Российской Федерации. // *Сахарный диабет*. 2016;19(1):30-43.

11. Schwartz AV, Sellmeyer DE, Strotmeyer ES, et al. Diabetes and bone loss at the hip in older black and white adults. // *J Bone Miner Res* 2005;20:596–603.

12. Sheena Kayaniyil, Reinold Vieth, Ravi Retnakaran, Julia A. Knight, Yingli Qi, Hertz C. Gerstein, Bruce A. Perkins, Stewart B. Harris, Bernard Zinman, Anthony J. Hanley. Association of Vitamin D With Insulin Resistance and β -Cell Dysfunction in Subjects at Risk for Type 2 Diabetes. *Diabetes Care*, Volume 33, Number 6, June 2010. 1379 – 1381.

13. A. Ataie-Jafari, Seng-Cheong Loke, Asmah B. Rahmat, Bagher Larijani, Farzaneh Abbasi, Melvin K.S. Leow, Zaitun Yassin. A randomized placebo-controlled trial of alphacalcidol on the preservation of beta cell function in children with recent onset type 1 diabetes. // *Clinical Nutrition* 32 (2013) 911-917.

14. E. Giovannucci, Yan Liu, Bruce W. Hollis, Eric B. Rimm. A Prospective Study of 25-Hydroxy-Vitamin D and Risk of Myocardial Infarction in Men. // *Arch Intern Med*. 2008 June 9; 168(11): 1174–1180. doi:10.1001/archinte.168.11.1174.

15. Sadayuki Ito, Atsushi Harada, Takehiro Kasai, Yoshihito Sakai, Marie Takemura, Yasumoto Matsui, Tetsuro Hida and Naoki Ishiguro. Use of alfacalcidol in osteoporotic patients with low muscle mass might increase muscle mass: An investigation using a patient database. *Geriatr Gerontol Int* 2014; 14 (Suppl. 1): 122–128.

16. Rosen C.J., Adams J.S., Bikle D.D. et al. The Nonskeletal effects of vitamin D: an Endocrine Society Scientific Statement // *Endocr. Rev*. 2012. Vol. 33. № 3. P. 456–492.

17. Ж.Е. Белая, Л.Я. Рожинская. Витамин D в терапии остеопороза: его роль в комбинации с препаратами для лечения остеопороза, внескелетные эффекты. // *Эффективная фармакотерапия*. 38/2013. Эндокринология. Спецвыпуск № 2 «Остеопороз». С.14-29.



18. Шварц Г.Я. Витамин Д и Д-гормон/ Г.Я. Шварц. – М.: Анахарсис, 2005. – 152с.

19. Н.Ю. Карпов, М.А. Рашид, Н.А. Шостак, Т.В. Казакова. Сердечно-сосудистые заболевания и остеопороз. Фарматека. Остеопороз. 2013г. с 8-13.

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**ANTI-ALCOHOL EDUCATION IN HALYCHYNA AT THE EARLY
TWENTIETH CENTURY**

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**АНТИАЛКОГОЛЬНЕ ПРОСВІТНИЦТВО В ГАЛИЧИНІ НА ПОЧАТКУ
XX СТОЛІТТЯ**

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Abstract. The phenomenon of anti-alcoholic movement in Halychyna consists in the various Ukrainian civic educational, medical, youth, cultural and educating organizations, political parties and church which actively participated in it. Despite its tasks they all had a common goal – to cease the extent of alcoholism among Ukrainians. In this regard, it was of great importance to make educational and enlightenment work among all social groups: from children to adults.

Keywords: fighting against alcoholism, Ukrainian civic associations, “Vidrodzhennia” society, educational work.

Анотація. Феномен антиалкогольного руху в Галичині полягає в тому, що у ньому брали активну участь різноманітні українські громадські освітні, медичні, молодіжні, культурно-просвітницькі товариства, політичні партії, церква. Незважаючи на свої завдання, вони мали спільну мету – зменшити розміри пияцтва серед українців. З огляду на це актуальною була просвітницько-пропагандистська робота серед усіх верств населення: від дітей до дорослих.

Ключові слова: антиалкогольна боротьба, українські громадські товариства, товариство «Відродження», просвітницька робота.

Introduction. Fight against alcoholism and smoking among children and adults in Ukraine is a problem of great importance these days. It has been raised by doctors, sociologists, psychologists, scientists, community, officials. In the early twentieth century, under conditions of foreign states domination and political oppression of the Ukrainian people, national public associations of Halychyna created a public system of health care for population of the region, thus offsetting gaps in the social policy of Austria-Hungary and Poland, in particular fighting against alcoholism.

At the end of 20th century movement for soberness in Halychyna was headed by “Vidrodzhennia” society which was founded in Lviv on February 14, 1909. Its main goal is fighting against alcohol and nicotine consumption among Ukrainian people. Movement for soberness was extensively supported by the Ukrainian Greek-Catholic



Church (UGCC). It was amplified not only on Halychyna, but on Volyn as well. During 1930s “Vidrodzhennia” society had 18 branches and 122 study groups which contained 6400 people [4, p. 154-159].

The main text. During 1920-1930s entire system of anti-alcoholic activity was created. Besides “Vidrodzhennia” society, there were also involved all Ukrainian civic organizations and institutions, in particular medical (Ukrainian medical society, Ukrainian hygienic society, “Narodna Lichnytsia”, etc.), educational (Ukrainian pedagogical society “Ridna Shkola” (UPS “Ridna Shkola”)), enlightening (“Prosvita”, etc.), youth (“Plast”, “Sokil”, etc.), household and economical (“Silskyi Hospodar”), female (“Union of Ukrainian Females”, etc.), the church (headed by industrious “anti-alcoholic speaker and propagandist” metropolitan Andrei Sheptytskyi) and political parties (Organization of Ukrainian Nationalists, Ukrainian People`s Democratic Party, UMU (Ukrainian Military Union). Thus, we can reasonably talk about creation of the common front of nationally-patriotic forces which consolidated Ukrainians on the problem of fighting against alcoholism and on health promotion of the nation. For example, this is evidenced by celebration “the month of fighting against alcoholism” in February. Beginning from 1930 it was regularly celebrated in the region, in particularly at Ukrainian private educational institutions UPS “Ridna Shkola”. This holiday celebration is creative using of European experience by Ukrainians. There was some progress at this sphere of social life in Western Europe. Residents of Halychyna imitated appropriate European campaigns which were aimed on fighting against high taxes on alcohol and against monopoly in its manufacture. In Ukrainian context movement for soberness had national aspect because it had not only anti-state (against Poland) course but it was aimed on the realization of great goal - ceasing the extent of alcoholism among Ukrainians that is the way to future economic and national independence.

Anti-alcohol and anti-nicotine movement in Halychyna was organic component of national movement of Ukrainian. The unknown author in his article “Social and economical problems of Ukrainian nationalism” emphasized that “special page in the history of social and economic struggle of Ukrainian village is opened by anti-tavern campaign” [5, p. 10], which gained features of not only distinct social and economic struggle for health promotion of Ukrainian nation (physical, mental, spiritual health of children, youth and adults), but also was of political context which means that Ukrainians when buying alcohol and tobacco from Jews and Poles financed foreign business, hence weakened national economy because “money wasted... on alcohol and tobacco transfers to unfamiliar hands that makes our nation poorer and our enemies become stronger [3, p. 4]. Thus, anti-alcohol movement was not only about fighting against anti-social events, but also it was of distinct national commonly-patriotic and household and economic context.

During their carrying out of “soberness month” “Vidrodzhennia” society issued proclamations to the people of Ukraine in which it was informed that alcohol and tobacco harm to human`s health and various forms of fighting against this social evil were suggested. It is important to stress that these proclamations were signed by moral authorities of Ukrainian nation – metropolitan Andrei Sheptytskyi as head of UGCC, leaders of principal political, cultural and educational, medical, household



and economical institutions, youth and female organizations, etc. These proclamations were peculiar manifests of struggle for common soberness, improvement of education and of people`s financial situation [4, c. 199]. They were printed by all Ukrainian magazines and were delivered by priests; in Ukrainian private educational institutes UPS “Ridna Shkola” they were propagandized by pupils who belonged to “Vidrodzhennia” society. It was of great importance to spread the idea of anti-alcohol and anti-nicotine propaganda among local Ukrainians.

“Vidrodzhennia” society along with other national institutions created the whole system of educational work in the sphere of movement for sober lifestyle of Ukrainians which in 1930s had systematic, stable and massive character: apart “soberness month” it organized anti-alcohol courses and lectures in cities and villages of the region, arranged town`s meetings, organized thematic exhibitions (adjustable, in particular), arranged free medical survey for people and various events regarding prevention from distribution of infectious diseases, tuberculosis, in particular, issued illustrated magazine “Vidrodzhennia” (1928-1939) and annex “My Molodi” (We Are Young) which were published monthly, issued literature of appropriate course, etc. So called plebiscitary events played an important role in the process of liquidation of taverns. Beforehand, Ukrainian civic institutions and political parties undertook immense organizational work. According to so called anti-alcohol law of 1920 which was adopted in Poland if 2/3 of community`s residents voted for tavern liquidation alcohol selling should be prohibited in territory of the region [2, p. 5-20]. Plebiscitary movement gradually became more and more popular. Therefore, for example in the period of 1920-1927 there were 216 anti-alcohol referendums in Poland; in the period of 1928-1940 there were 410 referendums, 402 of them in the territory of Ukraine. In other words, 97% of their total number [4, p. 217]. Oftentimes results of people`s willingness regarding prohibition of taverns were ignored or falsified by authorities. One of the reasons of that are turnovers reducing of “state” alcohol. That is why these actions were treated by authorities as such that have anti-state course. Polish government adopted the law from March 21, 1931 and its annex from November 30, 1931 which prohibited anti-tavern plebiscites [4, p. 217]. Results of all previous referendums were officially abolished. There was a need of second voting permission to which was very hard to get from the authorities. Thus, anti-alcohol plebiscites as a legal form of fighting against excessive drinking were hopeless under those circumstances. That is why Ukrainians extensively sought for new forms and methods of educational work. At the early 20th century “Vidrodzhennia” magazine published a lot of articles where it was stated that Ukrainians consciously refuse to spend money on alcohol and instead of it they invest in development of national household and economy, cultural and educational life: creation of cooperatives, “thrift funds”, opening of memorial in honor of those who had fallen in national-liberation battles, financial help to Ukrainian private educational instituted UPS “Ridna Shkola”, “Prosvita”, etc.

Unique event of anti-alcohol struggle of Ukrainians was “oath of soberness” – promise which was given by people in church in order not to drink alcohol and smoke. Such oaths were given by members of UMU-OUN. Nationally-conscious boys and girls took the sacrament not to drink alcohol until “Ukraine will be free”.



These “oaths of soberness” were initiated by brotherhoods of soberness in Halychyna yet in 19th century. Therefore, for example on January 1, 1930 750 residents of Saranchuky village, Berezhany district, gave such an oath on the occasion of creation of the center of anti-alcohol “Vidrodzhennia” society [1]. Alcohol-free weddings and other alcohol-free feasts were the new events in social life of Ukrainian nation.

Summary and Conclusions. Considering all achievements and unimproved opportunities (due to permanent prohibitions on the part of Polish authorities, due to present stereotypes of public conscience, etc) we can underline that the fact of rise and development of anti-alcohol movement which substantively influenced on ceasing the extent of alcoholism, improvement of physical, mental and social health of Ukrainian nation has great historical importance. Nowadays this experience could be very valuable and relevant for fighting against alcoholism and tobacco smoking among Ukrainians.

References:

1. Great Exploit of One Village // Dilo. – 1930. – November 5.
2. Herasymovych I. Away from Alcohol and Taverns. – Lviv, 1930. – 113 p.
3. Herasymovych I. Fighting against alcoholism / Ivan Herasymovych // Economic and Cooperative Magazine. – 1926. – April 28. – Vol. 18-19. – P. 4-5.
4. Savchuk B. P. Korchma: alcohol policy and soberness movement in Western Ukraine in 19th century – 30s of 20th century. – Ivano-Frankivsk: Lileia-NV, 2001. – 248 p.
5. Social and economic problems of Ukrainian nationalism // Development of the nation. – 1932. – January – February. – P.3-13.



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**THEORETICAL BACKGROUND AND ORIGIN BASIS OF RESEARCH OF
POLISH CHILDREN'S AND YOUTH'S HEALTHKEEPING EDUCATION
PROBLEM**

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Сливка Л. В.

**ТЕОРЕТИЧНЕ ПІДГРУНТЯ ТА ДЖЕРЕЛЬНА БАЗА ДОСЛІДЖЕННЯ
ПРОБЛЕМИ ЗДОРОВ'ЯЗБЕРЕЖУВАЛЬНОГО ВИХОВАННЯ ДІТЕЙ ТА
МОЛОДІ У ПОЛЬЩІ**

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Abstract. Article updates the need for educational research on comparative analysis of positive experience in implementing of healthkeeping actions in European countries as a future material to be used in the Ukrainian pedagogy. The author presented the names of scientists whose worksshe considers as a theoretical basis for the study of the theory and practice of healthy lifestyle education for children and young people in Poland and specified the source base of the study.

Key words: health, healthkeeping education, children and youth, Poland, the history of education.

Анотація. У статті актуалізована необхідність здійснення педагогічних досліджень щодо компаративного аналізу позитивного досвіду реалізації здоров'язбережувальних акцій європейських країн з метою використання його в українській педагогіці. Авторка представила прізвища науковців, праці яких вважає теоретичним підґрунтям вивчення теорії і практики виховання здорового способу життя дітей та молоді у Польщі, та конкретизувала джерельну базу дослідження.

Ключові слова: здоров'я, здоров'язбережувальне виховання, діти та молодь, Польща, історія освіти.

Introduction. The future of any country is directly linked with its children's and youths health, because of its status depends the quality and quantity of productive forces and potential of social development.

Analysis of the results of various studies gives reason to ascertain that Ukraine experienced negative trends in the health of children, adolescents and youth. Therefore it is necessary to look for reasonable, perhaps other ways of solving the problem of maintaining, strengthening and shaping the health of growing individual by training and education ways. The key to success in this area gives the natural relationship between Ukrainian and foreign pedagogical science, and comparative analysis of positive experience of European countries to be used in domestic practice.

The main text. Poland is close to Ukraine's geographic location, culture, centuries-old historical relationships and Slavic mentality. This country has



interesting traditions and a strong and effective retro experience in solving theoretical and practical aspects of healthkeeping education. In transformational conditions Poland solves almost the same as Ukraine strategic educational objectives, as well as a member of the European Union, has advantages in educational system reforms. An objective study, rethinking and taking into account Polish experience may help to the modernization and educational influences on health in Ukraine.

The theoretical basis of research work consists of Ukrainian and foreign scientists theses, which established philosophical, theoretical and medical aspects of the problem of education of healthy living of growing personality (M. Amosov, G. Apanasenko, I. Brekhman, E. Bulich, M. Goncharenko, I. Muravov, L. Sushchenko), specified organizational and pedagogical principles of educational work in intentional direction with children of different ages (T. Boychenko, O. Vashchenko O. Dubohay, S. Omelchenko, S. Sviridenko), modified technologies of educational influences, nurturing on the overcoming alcohol and tobacco abuse, drug abuse, early and disordered sexuality among growing individual (N. Maksimova, V. Orzhehovska, I. Sheremet). The numerous research, which defined strategy training for future teachers of healthkeeping activity (V. Bobrytska T. Vorontsova, M. Hrinova, O. Omelchenko, N. Urum, A. Filippyeva).

Polish researchers have the conceptual worth, which represented different vectors of solving the problem of maintaining, strengthening and shaping the health of a growing personality (B. Bik (*B. Bik*), M. Blakster (*M. Blaxter*), K. Bozhutska-Syetkyevych (*K. Borzucka-Sietkiewicz*), J. Opolskyi (*J. Opolski*), A. Tomchyk (*A. Tomczyk*), D. Tsyantsyara (*D. Cianciara*), Z. Jaworskyi (*Z. Jaworski*)). Separately, we should note PhD theses of Polish scientists, where the influence of socioeconomic conditions on health and healthy living individual was analyzed (J. Mazur (*J. Mazur*)), checked the level of physical development of young people who graduate school (M. Markovska (*M. Markowska*)), presented the researches of healthy lifestyle of high school students with the aim of optimizing of educational programs in the field of health promotion (P. Wojtyla-Butsora (*P. Wojtyła-Buciora*)), analyzed the content and technologies of forming of healthkeeping competences of secondary school pupils (A. Zalevska-Meler (*A. Zalewska-Meler*)), brought the problem of an attitude of students of pedagogical specialties to health as to one of the defining aspects of their preparation for healthkeeping education (A. Gavel (*A. Gawel*)).

"Statistical and informational" value represent works, which describes changes in the health of children, youth and adults in Poland (T. Byelytskyi (*T. Bielicki*), A. Valishko (*A. Waliszko*), Z. Velon (*Z. Welon*), B. Voynarovska (*B. Woynarowska*) [Woy], A. Dzhelska (*A. Dzielska*) [Dziel], V. Dudkyevych (*W. Dudkiewicz*), V. Yedlynska (*W. Jedlińska*), V. Zatonskyi (*W. Zatoński*), M. Malachowski (*M. Małachowska*), A. Malkovska-Shkutnyk (*A. Małkowska-Szkutnik*), P.F. Novak (*P.F Nowak*), A. Oblachynska (*A. Oblacińska*), J. Szymborskyi (*J. Szymborski*)).

Significant influence on the research logic have works of Ukrainian and foreign researchers, which highlights the historical aspect of the problem of healthy lifestyle of personality. Trends of Polish school system reform and its impact on the development of education in Poland of different time frames represented in historical



and pedagogical writings of A. Vasilyuk, V. Hommonay, L. Kurdybaha, A. Meisner, B. Melnichenko, V. Pomykalo, A. Savina, M. Smetanski, M. Chepil. Through researches of I. Andruhiv, J. Bodnar, A. Vynnychuk, O. Volyanyuk, N. Hnes, S. Ivakh, L. Klos, Z. Nahachevska, B. Savchuk, A. Tsybanyuk national science enriched by material on specific aspects of healthkeeping educational paradigm in Western Ukraine during interwar period of the twentieth century. The problem of physical education of children and young people in Poland in the historical context researched R. Gakh, V. Pasichnyk.

As profound we consider works of E. Vilchkovskyi [1], T. Ermakova [2], I. Mordvinova [3], N. Filippenko [4], which presented the Polish experience of the educational process aimed at the formation, storage and health promotion of pupils. However, we should notice that scientists highlighted the problem of healthkeeping in schools in their works basing primarily on time limits late XX – early XXI century.

Among the works of Polish researchers, which instituted retrospective aspects of healthkeeping of children and youth, we specify achievements of B. Bobrowska-Novak (*W. Bobrowska-Nowak*), J. Shempruh (*J. Szempruch*). J. Opolskyi (*J. Opolski*) presented the historical development issues of shaping the health of the individual. M. Katspshak (*M. Kacprzak*), S. Kopchinskyi (*S. Kopczyński*), B. Kravchyk (*B. Krawczyk*), K. Mitkyevych (*K. Mitkiewicz*), M. Poslushna (*M. Posłuszna*), M. Rotkevych (*M. Rotkiewicz*), E. Syrek (*E. Syrek*), S. Jaworskyi (*Z. Jaworski*) presented early experience of school health, physical education and a culture of health of pupils. In the works of M. Demel (*M. Demel*), L. Kurdybaha (*Ł. Kurdybacha*) are highlighted pro-health activities of public institutions and healthkeeping component of the work of particular personalities. M. Patsorek (*M. Paciorek*) and A. Felhner (*A. Felchner*) analyzed the role of the mass media in the development of healthkeeping activities at schools.

In the process, we learned a number of works and documents that we consider source base of our research. This are – concepts, projects and reports from educational and preventional programs in Poland "Clean air around us" (1997), "My child goes to school" (2002), "A glass of milk» (2004), "Fruits in school» (2009), "Healthy nutrition and physical activity in schools" (2009); "Do not smoke around me, please» (2010). Important for the study were materials found in science and educational periodicals: "Doctor's newspaper", "Leader", "Youth of the Polish Red Cross", "Museum", "Education and manners", "Problems of Hygiene and Epidemiology", "Health Buddy", "Movement", "Pedagogical Movement", "Physical Education" (1922-1936), "Physical Education in Schools" (1953- 1960), "Physical Education and School Hygiene" (1961-1986), "Health" , "Health – Health Culture – Health Education".

Summary and Conclusions. Despite the existence of diverse and very large-scale studies of healthkeeping of children and youth, the problem of pro-health education among students of secondary schools, which was solved in Poland during the XX – XXI century, has not become the subject of systematic study and special analysis neither in Ukraine nor Poland. The theoretical foundation presented in the article and source base are the basis for determining the characteristics of health education in the educational process of schools in Poland, finding the ways of



creative use of Polish experience of healthkeeping education of pupils in modern Ukraine.

References:

1. Vil'chkovskij E.S. Fizychnye vychovannya uchniv zahal'noosvitnich shkil Polshchi, XVI – pochatok XXI st. (istorychnyj aspekt): monografiya. – K., 2011. – 160 p.
2. Yermakova T.S. Pedagogichni poglady Yanusha Korchaka shchodo formuvannya zdorovoji osobystosti // Fizychnye vychovannja, sport i kultura u suchasnomu suspil'stvi. – 2014. – № 1. – P. 8-11.
3. Mordvinova I.V. Organizacijno-pedagogichni zasady zdorov'jazberezhualnogo vychovannya molodshych shkol'ariv u suchasnij Polshchi: avtoref. dys. na zdobuttya nauk. stupenya kand. ped. nauk : spets. 13.00.01. "Zagalna pedagogika i istorija pedagogiky" / I.V.Mordvinova. – Sumy, 2015. – 20 s.
4. Filippenko N.A. Vykorystannya elementiv muzykoterapii u pochatkovij osviti: dosvid Polshchi // Pedagogichni nauky: teorija, istorija, innovacijni tehnologii. – Sumy: SumDPU im.A.S.Makarenka. – P. 117-124.

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**COMPARATIVE CHARACTERISTICS OF MODERN METHODS
OF SAMPLING FROM ANIMAL CARCASSES**

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Abstract. A comparison of modern methods of sampling from animal carcasses for microbiological studies is conducted. The advantages and disadvantages of destructive and non-destructive sampling methods are examined. The optimal sampling sites for microbiological studies are found.

Keywords: measurement, destructive method, Non-destructive method, ink, microbiological research.

Introduction

Modern technologies allow to ensure maximum meat safety of products from field to table. However, even the use in the production of good (GMP) and good hygiene (GHP) practice does not ensure the production of safe products, as each successive stage of production, processing, storage, transportation and sale of meat affects its safety and quality. A systematic approach to the production of quality and safe meat is not only eliminates the risks at any stage and minimizes the cost of the final product of research (Gnatushenko A. V., 2004; Litsky V. A., 2005).

It is recognized that the determination of total bacterial count (MAFAnM), the number of enterobacteria and the presence of pathogenic micro-organisms on the surface of animal carcasses are important indicators for monitoring and verification guarantees of hygiene during the slaughter and primary processing. Number MAFAnM indicates the general hygiene of the product, the level of Enterobacteriaceae, by fecal contamination. The results of studies on these indicators demonstrate the microbiological quality of the production process.

Now in Ukraine to monitor the quality of processing of carcasses and prevent unwanted changes in carcasses during storage, in most cases, using a destructive sampling method. However it is known that in the world widely use the non-destructive method which maintains the integrity of the carcass (ISO 17604). Relevant is the preservation of the quality and safety of meat with periodic sampling for research at the stage of storage of carcasses.

The aim of the work was to compare the current sampling of carcasses – destructive and non-destructive, and to determine the optimal sampling sites.

Materials and methods

The studies were conducted on the basis of slaughterhouses in Enakievo and Zhytomyr and the State Scientific Research Institute for Laboratory Diagnostics and Veterinary-sanitary Examination.

The material for the study were the carcass of cattle (young in age from 24 to 36 months). All the carcasses were stored in the refrigerator at 0– -1° C. Sampling from the surface of half carcasses to study the presence and enterobacteria MAFAnM non-destructive method was performed with a sponge (ISO 6887-1). For this purpose, a set of Kit Muestreo Canales – Esponja (Spain) was used. To examine the presence of



bacteria of the genus *Salmonella* the method with using an abrasive sponge was chosen. Investigated sites can be rather high levels of contamination, with a total area of at least 400 cm².

In order to compare the destructive and non-destructive sampling of cattle carcasses (ISO 17604) quantification MAFAnM and enterobacteria were carried out.

During the destructive method of sampling was conducted after the initial processing of carcasses, but before beginning the process of cooling. From each of the 5 carcasses were taken 4 samples, which together accounted for 20 cm³ area carcass. In this parallel holes made with a sterile tempest cutting surface 5 cm³, and cut off with a sterile instrument from the carcass piece, measuring 5 cm³ and a maximum thickness of 2 mm. Tests for slaughter plant were placed in sterile containers or in plastic bags and transported to the laboratory, where they were homogenized. Non-destructive method involves three different methods: using a wet and dry swab sampling, a method with a sponge, and a method using a gauze swab. Samples were taken at 4 sites of the 5 carcasses. The area of each sampling site was at least 100 cm² with a total area of sampling from a carcass 400 cm². Statistical processing was performed on a computer Pentium-4 program in Microsoft Office Excel, 2003. The reliability was assessed by t-test.

Results

Data that is presented in Table 1, show that when using non-destructive and destructive sampling specific differences in microbial contamination of meat ink was not observed. When using these methods, the same was not found bacteria of Enterobacteriaceae and MAFAnM in the deep layers of meat carcasses and *Salmonella* in the study of surface and deep layers of meat. So, set aside a separate method as the best possible, and should only talk about their advantages and disadvantages, and already the choice of a particular method depends on the specific operating conditions.

According to the results of our studies, the advantage of destructive methods is that the cutting surface tissues from carcasses can collect all the bacteria in a selected area. Repeatability and reproducibility of destructive methods is less volatile, because when you use non-destructive sampling methods are considerable variations associated with the variability of the operator.

Table 1

**Comparative characteristics of destructive and non-destructive sampling,
M±m, n=5**

The sampling method		Enterobacteriaceae, CFU × 10 ⁵ /sm ²	MAFAnM, CFU × 10 ³ /sm ²
Non- destru	using a wet and dry pads	55,5±0,50**	36,5±0,38***
	using a sponge	66,0±0,66***	34,4±1,11*
	using a gauze swab	64,3±1,61**	36,8±0,18***
Destructive		58,2±0,40	31,7±0,28

Note . * P < 0.5 ** p < 0.01, *** p < 0.001 – compared with destructive method.

The disadvantage of destructive methods is the adverse effect on the integrity of the carcass quite naturally limits their use. Tissue destruction leads to damage to the carcass may be commercially unacceptable. Destructive sampling method involved a



small section of the carcass can lead to significant errors when contamination by micro-organisms is low and uniformly distributed or when existing pathogens that may be concentrated only in limited areas. Non-destructive techniques allow evaluation of large areas of the carcass.

Since the sampling sites from the carcass have to represent those parts of it that may have high levels of contamination, to the next stage of our research was to compare the bacterial colonization of such sites and analyze a true choice for microbiological sampling sites for beef carcasses. The results are shown in Table 2.

Table 2

**Comparative characteristics of sampling sites from cattle carcasses ,
M±m, n=5**

Plot sampling	Microorganisms in the field of view; from superficial/ deep layers
Loin	5,0±0,06***/no
Rear part (sirloin)	8,1±0,07**/no
Butt	відсутні***/no
Rump	5,26±0,22***/no
Rear	38,7±0,07***/9,4±0,16***
Sternum	44,8±1,05***/8,4±0,13***
Shoulder part	6,3±0,17***/ no
Flank	34,5±0,14***/7,7±0,12***
Slaughter	58,1±0,36***/10,7±0,1***
Shin back	8,7±0,07*/no
Front leg	6,5±0,22***/no
Chuck	8,54±0,07/no

Notes:

1. Numerator is a number of microorganisms in the field of view on the surface of the carcass , the denominator – in deep layers.
2. * P < 0.5 ** p < 0.01, *** p < 0.001 – compared with destructive method.

The data presented in Table 2, indicate that no microorganisms in smears from deep layers and carcass most sites were found throughout the smears from the surface layers. Studies indicate that the optimum sites for sampling from a beef carcass neck sternum and side knuckle where revealed high amount of microorganisms in the field of view of surface layers and their presence in the deep layers, and therefore, they are portions with a high the level of contamination.

Conclusions

1. Application of non-destructive and destructive methods of sampling does not affect the results of microbiological studies, however non-destructive methods allow us to estimate the bacterial colonization of large areas of the carcass.

2. The most optimal sampling sites for microbiological studies with cattle carcasses is the place of slaughter sternum, groin, and rump, as they represent areas with high levels of contamination.



Links

1. GNATUSHENKO A. V. Technology assessment of beef production in dairy and beef cattle of the steppe zone of Ukraine: Author. dis. on competition of Sciences . Ph.D. degree agricultural Science: special. 06.02.04 "Livestock products" / A. V. Gnatushenko. – Kyiv, 2004. – 16 p.

2. LITSKY V. A. Zootechnical requirements for improving the rearing technology in the production of beef on small farms: Author. dis. on competition of Sciences. Ph.D. degree agricultural Science: special. 16.00.06 "Animal Hygiene and Veterinary Sanitation" / V. A. Litsky . – L., 2005 . – 20 p.

3. ISO 17604 Microbiology of food and animal feeding stuffs – Sampling of ink for microbiological analysis.

4. ISO 6887-1 Microbiology of food and animal feed. Preparation of test samples, initial suspension and decimal dilutions for microbiological analysis. – Part 1: General rules for the preparation of the initial suspension and decimal dilutions.



CONTENTS

<i>j1106-001 Davydenko O.N., Myronyk O.V., Sydorchuk A.S.</i> CLINICAL EFFICACY OF THE DRUG "GEPADIF" IN COMPLEX TREATMENT OF PATIENTS WITH CHRONIC HEPATITIS C.....	3
<i>j1106-002 Butyrsky A.G., Butyrskaya I.B.</i> HISTOCHEMICAL RATIONALE OF BIOGRAFTS USING FOR LEG VENOUS ULCERS TREATMENT.....	6
<i>j1106-003 Konovalova A.B., Ivanova L.A.</i> THE EFFECT OF THE VITAMINE D PREPARATIONS ON THE OUTCOMES OF MYOCARDIAL INFARCTION IN PATIENTS WITH TYPE 2 DIABETES, OSTEOPOROSIS OR OSTEOPENIA.....	10
<i>j1106-004 Bilavych G.V., Savchuk B.P., Bilavych I.V.</i> ANTI-ALCOHOL EDUCATION IN HALYCHYNA AT THE EARLY TWENTIETH CENTURY.....	16
<i>j1106-005 Slyvka L.V.</i> THEORETICAL BACKGROUND AND ORIGIN BASIS OF RESEARCH OF POLISH CHILDREN'S AND YOUTH'S HEALTHKEEPING EDUCATION PROBLEM.....	20
<i>j1106-006 Iakubchak O.M., Taran T.V.</i> COMPARATIVE CHARACTERISTICS OF MODERN METHODS OF SAMPLING FROM ANIMAL CARCASSES.....	24