ma difuză mai frecvent e prezentă diarea (77,8% versus 2,6%, p<0,01), sindromul de malabsorbţie (11,1% versus 0%, p<0,01), pierderea ponderală (70,4% versus 14,1%, p<0,01), iar în forma limitată – disfagia (66,7% versus 44,4%, p<0,05), pirosisul (50% versus 33,3%, p<0,05), constipaţia (49,7% versus 11,1%, p<0,01), incontinenţa anală (5,1% versus 0%, p<0,05).

Concluzii

1. Afectarea digestivă la pacienţii cu sclerodermie sistemică este frecventă, diversă şi complexă.
2. Pacienţii cu forma difuză a bolii mai frecvent prezintă diaree, sindrom de malabsorbţie şi pierdere ponderală.
3. Pacienţii cu forma limitată a maladiei suferă ma frecvent de disfagie, pirosis, constipaţii şi incontinenţă anală.

Bibliografie

1. Hochberg M. *Rheumatology, fourth edition.* Mosby Elsevier, 2008, p. 1361-1423.
2. Ionescu R. *Esenţialul în Reumatologie.* Ed. Amaltea, 2007, p. 382-396.
3. Forbes A., Marie A. *Gastrointestinal complications: the most frequent internal complications of systemic sclerosis.* In: Rheumatology (Oxford), 2009; nr. 48 (suppl. 3), p. 36-39.
4. Kowal-Bielecka O., Landewe R., Avouac J . et al. *EULAR recommendations for the treatment of sistemic sclerosis a report from the EULAR Scleroderma Trials amd Research Group (EUSTAR).* In: Ann. Rheum. Dis., 2009; nr. 68, p. 620-628.
5. Zuber-Jerger I., Muller A., Kullmann F. et al. *Gastrointestinal manifestation of systemic sclerosis-thickening of the upper gastrointestinal wall detected by endoscopic ultrasound is a valid sign.* In: Rheumatology, 2010; nr. 49, p. 368-372.

Svetlana Agachi, dr. med, conferenţiar universitar,
Clinica medicală nr. 5 Reumatologie şi Nefrologie,
USMF „Nicolae Testemiţanu"
Chişinău, str. Florilor 16/1, ap. 90
Tel.: 022205509; mob. 069334927
E-mail: svetaagachi@yahoo.com

SECONDARY OSTEOPENIA AT CHRONIC PANCREATITIS AND WAYS OF CORRECTION

L.S. BABINETS, I.V. SEMENOVA,
Ternopil State Medical University by I.Ya. Horbachevsky

Summary

Secondary osteopenia at chronic pancreatitis and ways of correction

The expediency of taking Vitrum Calcium 600+D400 in the complex treatment of patients with chronic pancreatitis accompanied with osteodeficiency has been proved. Taking of the medication led to substantial reliable (p<0,05) improvement of bone mineralization – mineral density has increased by (0,279±0,020) g/cm² and by (3,31±0,47)%, bone and mineral metabolism indexes (alkaline phosphatase, calcium and phosphorus) have optimized.

Keywords: *chronic pancreatitis, osteodeficiency, bone mineral density, mineral metabolism, Vitrum Calcium 600+D400.*

Резюме

Комплексное лечение больных хроническим панкреатитом с сопутствующим остеодефицитом

Доказана целесообразность использования препарата Витрум Кальциум 600+D400 в комплексном лечении больных хроническим панкреатитом с сопутствующим остеодефицитом, что привело к существенному достоверному (p<0,05) улучшению состояния минерализации кости – приросту минеральной плотности на (0,279±0,020) г/см² и на (3,31±0,47) %, оптимизации показателей костно-минерального метаболизма – щелочной фосфатазы, кальция, фосфора.

Ключевые слова: *хронический панкреатит, остеодефицит, минеральная плотность костной ткани, минеральный обмен, Витрум Кальциум 600 + D400.*

Introduction

The problem of osteodeficiency (OD) on the background of chronic pancreatitis (CP) is one of the pressing in modern medicine. Delayed diagnosis of secondary osteoporosis (OP) caused by severe manifestation of the basic disease often leads to such complications as fractures [1, 2, 7].

Judging by recent publications it is obvious that the core reason of OD formation is violations of micronutrient homeostasis and metabolism of vitamin D, malabsorption and maldigestion syndromes. Thus, special attention should be payed to the fact that polynutrient insufficiency and trophologic disorders accompanied with CP cause OD and both osteoporosis and osteomalacia as the result of vitamin D deficiency [8, 9]. In addition, CP is often accompanied with hypoalbuminaemia which induces the inferiority of protein part of the musculoskeletal system of the patient [5].

The threat of irreversible changes in the musculoskeletal system in patients with CP determines the necessity to solve the question of finding a rational therapy and the development of preventive measures.

The main requirements for correction of OD with CPs are: complex treatment of the basic disease, careful selection of medications to inhibit OP considering the impact on its pathogenetic links with minimal negative effects and polypharmacy.

One of the new perfectly balanced and economically accessible antiosteoporosis means is Vitrum Calcium 600+D400 by Pharmaceutical Company *UNIPHARM*, Inc., USA.

The aim of the investigation is to prove the expediency of using the medication Vitrum Calcium 600+D400 in the complex treatment of patients with CP accompanied with concomitant osteodeficiency syndrome. This is a part of the complex theme "The role of neuroendocrine and immune interactions and the development of its corrective methods for patients with secondary osteoporosis."

The main **tasks** are to prove the effectiveness of Vitrum Calcium 600+D400 in the therapeutic treatment of CP to correct bone loss and mineral metabolism disorders.

Materials and methods

The object of our study were 75 patients with CP who had regular medical check-up in outpatient department of Ternopil hospital №2. The age of patients was from 23 to 72; sex – 31male and 44 – female. CP was diagnosed on the basis of anamnesis, clinical strokes of the disease (pain, dyspeptic, exocrine insufficiency, allergic, astheno-vegetative, enteropancreatic and endocrine disorders syndrome), laboratory data (including blood amylase, urine diastase, glycemic profile), the results of abdomen ultrasound investigation, gastroscopy [10]. The exclusion criteria was the presence of other pathology that could cause the development of secondary OP. To judge upon the condition of bone mineral density (BMD) each patient had densitometric examination of the lumbar spine by Dual Energy X-Ray Absorptiometry (DXA) made by Lunar corp. (Madison, WI) – Lunar DPX-A №2589. The base of the analysis of changes in BMD is formed by data obtained in statistically sufficient population studies of groups of healthy people of different race, gender, age, weight and height [11]. The assessment of BMD according to the stages was conducted in accordance with WHO recommendations and L.Y. Rozhynska proposals [12]. The results were processed statistically using a personal computer with standard statistical package of application programs and evaluated by Student's criteria.

The concentration of calcium, inorganic phosphorus in serum and alkaline phosphatase (ALP) levels were determined by conventional methods [3]. The control group consisted of 20 healthy persons.

Patients with CP and concomitant OD were divided into two groups of program correction. Group I (15 patients) received generally accepted in gastroenterology medical complex (ML) on demand, according to the patient's condition. It included diet №5 by Pevsner, Omeprazole (20 mg once per day, Creon 25000 (3 times per day with meals), Nospanum forte (80 mg twice per day), Motilium (10 mg 3 times per day before food). Group II (15 patients) received ML complex together with Vitrum Calcium 600+D400 according to the following therapeutic scheme: 1 capsule of Vitrum Calcium 600+D400 twice per day during or after meals during 1 month, and then 1 capsule once a day during 2 months.

Vitrum Calcium 600+D400 (Certificate of Ministry of Health of Ukraine № UA/1721/01/01) is a complex of calcium supplements (in the form of calcium carbonate from oyster shells) 600 mg and vitamin D3 (cholecalciferol) 10 mcg (400 IU).

No complications and side-effects have been observed in our investigation. Investigated parameters were determined before treatment and 6 months after its beginning.

Results and discussion

The table presents the results of effects of both treatment programs. It includes the data of bone and mineral metabolism of patients with PC.

The dynamics of data in patients with CP with concomitant osteodeficiency under various medical complexes

Index	Research Group			
	Group I (n=15)		Group II (n=15)	
	before treatment	after treatment	before treatment	after treatment
BMD, g/cm²	0,868± 0,034	0,859± 0,023	0,714± 0,021	0,993± 0,019*
T, equivalent units	-1,921± 0,155	-2,193± 0,112*	-2,461± 0,131	-1,983± 0,116*
T, %	77,38± 1,25	76,51± 1,11	72,81± 0,54	76,12± 0,41*
Total calcium in blood, mmol/l	2,23± 0,12	2,21± 0,05	1,99± 0,04	2,31± 0,12*
Phosphorus in blood, mmol/l	1,35± 0,32	0,99± 0,25*	1,02±,14	1,39± 0,11*
Alkaline phosphatase, mmol/l	1,51± 0,16	1,22± 0,13*	1,69± 0,14	1,22± 0,08*

Notes: * – probable difference regarding indices of the relevant research group before treatment ($p < 0,05$). All indices of bone tissue are reliable regarding reference database Lunar.

Under the influence of ML patients with CP accompanied with OD: Group I (initial data referred to osteopenia of II stage) indices of bone tissue decreased, although the changes were not reliable ($p>0,05$). In Group II (initial data referred to osteopenia of the III stage), we noted the growth of BMD by (0,279±0,020) g/cm² and by (3,31 ± 0,47) %. Thus, taking Vitrum Calcium 600+D400 according to the

suggested scheme during the year led to significant reliable (p<0,05) improvement of bone mineralization. It should be noted that the level of total calcium in blood in Group I during the treatment has not changed and was in the normal range (index in the control group of healthy young people – (2,25±0,11) mmol/l. The level of total calcium in blood in Group II before treatment was slightly lower in relation to the control group (p<0,05), after the correction it increased significantly and was within normal limits. The level of inorganic phosphorus in both research groups was within the normal range (control group index – (1,17±0,13) mmol/l), before as well as after the treatment. A significant increase of this parameter (p< 0,05) in Group II after the correction should be noted. ALP Index as the marker of bone metabolism in research groups was in the normal range, although a significant decrease of this index in Group II after the treatment (p<0,05) should be noted. These figures proved a positive balance of bone remodelling in favour of osteoformation after the correction.

Thus, the analysis of received data proves the efficiency of the medication Vitrum Calcium 600+D400 in the complex treatment of patients with CP for correction of accompanying OP, mineral metabolism disorders and their prevention.

Conclusions

1. Taking of Vitrum Calcium 600+D400 according to the suggested scheme in the complex treatment of patients with chronic pancreatitis with concomitant osteodeficiency led to the substantial significant (p<0,05) improvement of bone mineralization – the increase of mineral density by (0,279±0,020) g/cm^2 and by (3,31±0,47) %, optimizing the figures of bone and mineral metabolism - alkaline phosphatase, calcium and phosphorus (half a year after the beginning of the treatment).

2. It is reasonable to subscribe Vitrum Calcium 600+D400 according to the following therapeutic scheme – 1 capsule twice a day during or after meals during 1 month, and then – 1 capsule once a day during 2 months.

In the future we'll plan further research to examine the impact of Vitrum Calcium 600+D400 in combination with antiresorptional medications for bone tissue of patients with CP and concomitant osteodeficiency.

Bibliography

1. Филиппов Ю.А. *Панкреатиты: осложнения и исходы.* В: Гастроентерологія. Міжвідом. зб., вип. 36, Д.: Журфонд, 2005, с. 374-377.
2. Губергріц Н.Б. *Практична панкреатологія.* Н.Б. Губергріц, С.В.Скопіченко, Донецьк: Либідь, 2007, 244 с.
3. Дедух Н.В. *Возможные механизмы костной резорбции при алиментарном остеопорозе (Обзор литературы).* В: Український медичний альманах, 2001, том 4, с. 213-217.
4. Древаль А.Н. *Современный взляд на роль кальция и витамина Д в профилактике и лечении остеопороза.* В: Украънський ревматологычний журнал, 2009, № 3, с. 81-85.
5. Пасієшвілі Л.М., Бобро Л.М. *Порушення кальцієвого обміну як предиктор формування вторинного остеопорозу у хворих на хронічний панкреатит. Патогенетичні аспекти взаємозв'язку та взаємообтяження.* В: Сучасна гастроентерологія, 2008, с. 4-8.
6. Поворознюк В.В. *Кальцій та вітамін D у профілактиці та лікуванні остеопорозу.* В: Здоров'я України, 2002, с. 5-8.
7. Поворознюк В.В., Григор'єва Н.В., Татарчук Т.Ф. *Остеопороз – "Мовчазна епідемія".* В: Здоров'я України, 2007, № 3, с. 61.
8. Бабінець Л.С. *Порушення екскреторної функції підшлункової залози як фактор формування мінеральної недостатності при хронічному панкреатиті.* В: Український морфологічний альманах, 2006, № 2, с. 7-9.
9. Бабінець Л.С., Сміян С.І. *Порушення балансу вітамінів і мінералів у хворих на хронічний панкреатит із супутнім остеодефіцитом.* В: Проблеми остеології, 2005-2006, т. 8-9, № 4(1), с. 83-86.
10. *Сучасні класифікації та стандарти лікування розповсюджених захворювань внутрішніх органів.* За ред. д.м.н., проф. Ю.М. Мостового. 13-е вид., доп. і перероб. Вінниця, 2012, 576 с.
11. Гайко Г.В., Бруско А.Т., Рой І.В., Калашніков А.В. *Альтернативний метод діагностики остеопорозу.* В: Проблеми остеології, 2001, № 1–2, с. 14-17.
12. Гельцер Б.И., Кочеткова Е.А. *Анализ показателей плотностикостнойткани у больных бронхиальной астмой.* В: Терапевтический архив, 2002, № 1, с. 64-67.

Лилия Степановна Бабинец, д-р мед.наук, профессор,
Кафедра первичной медико-санитарной помощи и семейной медицины
ТГМУ им. И.Я. Горбачевского,
г. Тернополь, ул. Довженко 3А/1
тел. 067–352–07–43, lilyanet@tut.by

Ирина Васильевна Семенова, соискатель,
Кафедра первичной медико-санитарной помощи и семейной медицины
ТГМУ им. И.Я. Горбачевского
г. Тернополь, ул. Петлюры 10/158
тел. 098-071-56-47, semenovarina@rambler.ru