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**THE PECULIARITIES OF TEACHING  
PATHOPHYSIOLOGY TO ENGLISH-  
SPEAKING STUDENTS****Key words:** *teaching, Pathophysiology, English-speaking students.***Abstract.** *The peculiarities in reality of the education process teaching pathophysiology subject to English-speaking students were summarized, an attempt to work out the recommendations for the academic process organization was made.*

The progress and reformation of high school in Ukraine make higher education available not only to Ukrainians but also to foreign citizens [2]. The high level of medical education, relatively low education fees, and possibility to be instructed in English are the advantages of education at Ukrainian medical universities for the students from English-speaking countries. Zaporizhzhya State Medical University started teaching foreign students in English in 2002.

Most of the students who are taught in English come from India and Nigeria; there are also students from other Asian and African countries. English is a native language neither for our students nor for teachers, therefore the specificity of pronunciation leads to additional problems which, in their turn, may cause misunderstanding between teachers and students.

Pathophysiology training takes place in the 3rd year of study at the medical university. Pathophysiology is a very important academic subject because it plays a central role in higher medical education and links theoretical medical subjects (Anatomy, Histology, Biochemistry, Physiology et al.) with the clinical subjects (Internal Diseases, Surgery, Neurology, Gynecology et al). The aim of teaching Pathophysiology is to equip the students with the knowledge of the basic concepts of pathological processes development, which in their different combinations underlie the process of disease development. This knowledge is an important condition of understanding ethiology, pathogenesis, clinical signs, principles of therapy and prophylaxis of different diseases.

It is Pathophysiology that helps to make the first steps in the formation of so-called "clinical thinking". To acquire the skills of clinical thinking is the task of the highest importance in medical education - it determines the level of specialist's qualification, his ability to make correct decisions in different clinical situations.

**THE AIM** of the work is to summarize our 10-

year experience of teaching Pathophysiology to English-speaking students and mark out the main peculiarities which are very important for this form of education.

The first problem we faced at the beginning of teaching Pathophysiology to English-speaking students was to overcome the language barrier between a teacher and a student. In order to maintain the high level of education in this form of training the teacher should have a high level of the English language knowledge and should be able to speak fluently with the students not only during practical classes and lectures but also in out-of-class communication [5]. Zaporizhzhya State Medical University organizes English courses for the teachers with different levels of language knowledge and gives them the possibility to improve their language skills constantly.

The modern educational process under the rules of Bologna process includes a high percentage of students' individual work that greatly increases their personal responsibility for their education. Another problem which foreign students experience when studying Pathophysiology in Ukrainian medical universities is that they cannot use textbooks from their native countries while preparing for our practical classes. Pathophysiology is an academic subject only in post-Soviet Union countries and in some countries of Eastern Europe. In most English-speaking countries, the problems of organs and systems pathophysiology are discussed in the course of Pathology. The Pathology course includes not only the mechanisms of diseases development but also their morphological characteristics, which are studied in Ukrainian medical universities in the course of Pathomorphology. The role of the department in this situation was to provide the students with the necessary methodical materials [1]. The teachers of Pathophysiology department worked out a complete set of methodical materials for students' training: a working program, Workbook for practical classes, Manual for practical classes, Tests collection for

computer control of Pathophysiology knowledge level. Each student works with the Workbook while preparing for a practical class and during it. It contains questions for preparation and discussion, tables, diagrams and schemes which have to be completed in a written form by the student, activating his motor logic memory. Additional methodical material is given to the students in the form of diagrams, schemes and illustrations on the main sections of Pathophysiology which are presented on the stands in the classroom. The use of such visual aids in Pathophysiology training is useful because it helps to activate students' visual memory for easy retention of necessary information. [4]

It is commonly known that the knowledge level among the students in an academic group is non-uniform. Four types of knowledge level can be identified: initial, average, sufficient and high [3]. A student with an initial level of knowledge has an initial notion about the academic subject and can give only elementary and fragmentary answers. An average level of knowledge means that a student can explain the basic concepts, solve the tasks according to the given pattern. A student with a sufficient knowledge level can explain the basic concepts of the subject, he is also able to find the relationships between them and use his knowledge in standard situations. He is able to analyze, abstract and make general conclusions, form the basis of the answer, find and correct his own mistakes. A high level of knowledge is characterized by profound and systemic knowledge, a student can use it creatively in different situations, and he is able to give his own assessment of facts and events.

We try to define the knowledge level of each student during the practical classes at the beginning of Pathophysiology study and then to propose them to solve educational tasks according to their individual knowledge level. The students with initial knowledge level can work with information resources in order to gain skills of systematization and analysis of the educational material - for example to define the main symptoms and signs of certain pathology and explain the mechanisms of their development.

The majority of the students who have an average level of knowledge are given typical situational problems to solve. They can also carry out simple laboratory works under the teacher's guidance. These types of activities should train students to make pathophysiological analysis of a typical pathological process or disease: to define the main link of pathogenesis, estimate causality-effective relations, and make logical conclusions.

The students with a sufficient or high knowledge level are given more complicated situational problems

which model clinical situations. The students should find out the reasons, conditions and mechanisms of a pathological process or disease, justify the diagnosis of the patient and make the prognosis of the disease development. The students with a high level of knowledge are also proposed to work out the main principles of disease therapy which are aimed at its etiology, pathogenesis and symptoms. Their tasks may include a combination of diseases and/or pathological processes, for example, the patient with ischemic heart disease has atherosclerotic plaques and signs of peripheral circulation disturbance.

Unfortunately, the percentage of students with a sufficient knowledge level among foreign students is not so high. Only a few students demonstrated a high knowledge level; they were involved in scientific research activity of the Pathophysiology Department and presented the reports at the Students' Scientific Conference.

One of the main criteria of Pathophysiology training efficiency is the result of Krok-1 examination. The preparation for this examination begins from the first practical classes: the students solve tests from Krok database during practical classes, these tests are included in our own computer database and used during Submodules and Modules controls. The most difficult tests are discussed during lectures and explained by teachers during individual consultations with students. The Krok results in Pathophysiology of the last three years are the following: English-speaking students answer questions on Pathophysiology better than the foreign students who are instructed in Russian language.

## CONCLUSION

Pathophysiology teaching must result in medical students' obtaining the necessary knowledge of reasons, conditions and mechanisms of disease development as well as in their ability to use this knowledge in their further professional life. The quality of Pathophysiology teaching increases when we use an individual approach to each student taking into account his abilities and knowledge level, provide students with necessary methodical materials, and effectively control their individual work during practical classes and in out-of-class study.

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#### **ОСОБЛИВОСТІ ВИКЛАДАННЯ ПАТОФІЗІОЛОГІЇ АНГЛОМОВНИМ СТУДЕНТАМ**

*О.В Мельнікова*

**Резюме.** В статті узагальнені особливості викладання патофізіології англomовним студентам, зроблена спроба розробки рекомендацій з організації навчального процесу.

**Ключові слова:** викладання, патофізіологія, англomовні студенти.

#### **ОСОБЕННОСТИ ПРЕПОДАВАНИЯ ПАТОФИЗИОЛОГИИ АНГЛОЯЗЫЧНЫМ СТУДЕНТАМ**

*О.В. Мельникова*

**Резюме.** В статье обсуждаются особенности преподавания патофизиологии англоязычным студентам, сделана попытка разработки рекомендаций по организации учебного процесса.

**Ключевые слова:** преподавание, патофизиология, англоязычные студенты.

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