

TERMINOLOGICAL COLLOCATIONS IN MEDICAL LATIN AND ENGLISH: A COMPARATIVE STUDY

Olena M. Bieliaieva, Yuliia V. Lysanets, Ivanna V. Znamenska, Inesa V. Rozhenko,
Nataliia M. Nikolaieva

Department of Foreign Languages with Latin Language and Medical Terminology, Ukrainian
Medical Stomatological Academy, Poltava, Ukraine

Background. The present paper examines the linguistic status of terminological collocations in medical Latin and English, discusses the most productive term-formation models and ways of Latin-English translation.

Aim. The authors aim to provide the comparative analysis of Latin and English terminological collocations and suggest their classification in terms of the idiomaticity level and semantic valency.

Materials and methods. The research is based on the corpus of terminological collocations in Latin and English medical discourse using structural, etymological, typological, comparative methods, as well as the method of semantic analysis and conceptual metaphor theory.

Results. The research has resulted in the delineation of the following groups of terminological collocations in medical Latin and English: (1) terminological collocations with lower degree of idiomaticity — analytical units whose semantics correlates with the amount of free meanings of the components; (2) terminological collocations with semantic cohesion of the components due to metaphorical nature of the terminological element with active / passive valency; (3) clinical idioms — terminological collocations with higher degree of idiomaticity. Within the latter group, we suggest to discern eponymic, toponymic, zoomorphic, botanic and mythonimic subtypes of terminological collocations.

Conclusions. A promising area of future research is the development of bilingual

explanatory dictionaries with Latin and English equivalents of terminological collocations, as well as the information about the semantics of their components.

Keywords: medical terminology, terminological collocations, idiomatic expressions, onomastic component.

Introduction. Terminological collocations are usually defined as heterogeneously structured units which include proper terms and nomenclature names, and constitute 60-75% (in certain terminological systems this number reaches 95%) of the total amount of terminological units [5; 6]. Terminological collocations have repeatedly been the subject of linguistic analysis: the classification of terminological collocations [3; 6; 10], and their linguistic nature [1; 2; 5; 8] have been investigated, although the latter remains a controversial issue. Meanwhile, the issue of classifying the terminological collocations in Latin and English languages of medicine has not been the subject of special study, which renders the present paper relevant.

The **aim** of the research is to investigate the linguistic nature of terminological collocations in Latin and English, and provide classification of anatomical, histological, clinical, and pharmaceutical units in these languages.

Material and methods. The material of the research is the corpus of terminological collocations operating in Latin and English languages of medicine. Structural, etymological, typological, comparative methods, as well as the method of semantic analysis and conceptual metaphor theory have been applied.

Results. Collocations in medical terminology possess a number of specific features. First of all, it is necessary to bear in mind that approximately 95% of English terms are borrowed from or created on the basis of classical languages — Latin and Greek. Hence, most medical terms are international in almost all European languages. Some special expressions

are used by medical professionals only in Latin, such as “in vivo”, “in vitro”, “per os”, “per rectum”, “ex tempore”, “exitus letalis”, “loco typico”, “per vias naturales”, “status praesens aegrōti”, “in situ” etc. Due to these linguistic processes, medical terms are highly motivated and are semantically “transparent” [4]. In terms of syntactic models used in terms, in most cases, two variants can be observed: the substantive and the attributive. The substantive model in Latin is represented by two nouns (in Nominative and Genitive cases) which are usually transformed into the attributive pattern in English: “cervix uteri” — “uterine cervix”, “cirrhosis hepatis” — “hepatic cirrhosis”. Attributive components constitute a substantial layer of medical terminology in both languages (with due consideration of word order peculiarities): “tonsilla palatina” — “palatine tonsil”; “myopia progressiva” — “progressive myopia”, “solutio oleosa” — “oily solution”. The substantive model of collocations is sometimes complemented by participial clauses and participles with nouns which is preserved in English as well: “arteria comitans nervi ischiadici” — “accompanying artery of ischiadic nerve”. Numerous terminological collocations consist of two attributive components: “hepatitis activa chronica” — “chronic active hepatitis”, “arteria iliaca externa” — “external iliac artery”. Substantive terminological collocations in Latin are characterized by the following model: the noun in Nom. Sing. + noun in Gen. Sing. At the same time, the English equivalents of such terms quite often demonstrate the tendency to attributive structure: “embolia cerebri” — “cerebral embolism”; “abscessus pulmonum” — “pulmonary abscess”. Another productive term-formation model in Latin — noun in Nom. Sing. + noun in Gen. Sing. + adjective (participle) — is also rendered differently in English: “ruptura uteri spontanea” — “spontaneous rupture of the uterus”; “syndromum nervi nasociliaris” — “nasociliary syndrome”.

There are different views on the nature of terminological collocations in the scientific literature: some researchers refer to them as traditional expressions, or ready-made units of

language [3]. Others define terminological collocations as a special kind of idioms, whose formation is caused by the need for nomination of scientific objects [4; 8], as terminological phraseological units — heterogeneously structured but semantically and syntactically indivisible phrases [5], which contribute to the specification and expressiveness of concepts. Terminological collocations are also defined as “phraseologized” phrases formed by semantic condensation, resulting in the fact that several components express one and the same concept [1]. We strongly agree with the position of scientists [2; 7; 8; 9], who believe that terminological collocations are eliminated from the category of free expressions, as they are not generated in the speech, but are only regularly reproduced in the professional language as an integral unit of nomination; they are driven by component composition, semantic and formal relations that allows us to consider terminological collocations as idiomatic complexes with varying degrees of idiomaticity.

We suggest to distinguish terminological collocations with lower degree of idiomaticity — analytical units whose semantics *in corpore* correlates with the amount of free meanings of the components. The main difference of such terminological collocations from free non-terminological units consists in the fact that they are always associated with a specific concept, and therefore they are semantically-integral. Elements of terminological collocations can occur in various combinations, without changing their self-sustained meaning in both languages under consideration. Within the framework of this terminological category, further division is necessary. The first subgroup contains terminological units which preserve the similar structure in Latin and English languages of medicine (loanwords). For example: “arcus aortae” — “arch of aorta” / “arcus costalis” — “costal arch” / “arcus dentalis” — “dental arch” / “arcus venosus” — “venous arch” / “arcus alveolaris” — “alveolar arch” / “arcus zygomaticus” — “zygomatic arch” / “arcus vertebrae” — “vertebral arch” / “radix arcus vertebrae” — “radix of vertebral arch” / “vertebra cervicalis” — “cervical

vertebra”; “processus transversus” — “transverse process”; “tuberculum anterius processus transversus” — “the anterior tuberculum of the transverse process”. The second subgroup contains terminological units of English origin: “os alveolare” — “alveolar bone”; “ren dexter” — “the right kidney”; “genu dextrum” — “the right knee”; “articulatio genus” — “knee joint”; “manus dextra” — “the right hand”; “oculus dexter” — “the right eye”, etc.

The next type is represented by terminological collocations with semantic cohesion of the components due to metaphorical nature of terminological element with active / passive valency. The majority of such units in English are also borrowed from Latin: “nucleus caudatus” — “the caudate nucleus”, “vermis cerebelli” — “cerebellar vermis”; “saccus lacrimalis” — “lacrimal sac”; “fundus oculi” — “eye ground”; “sella turcica” — “Turkish saddle” (a depression in the sphenoid bone of the human skull, resembling a saddle); “insulae pancreaticae” — “pancreatic islets”; “porta hepatis” — “the porta hepatis”. Meanwhile, a number of terminological collocations are of English origin, although directly translated from Latin: “cauda pancreatis” — “tail of pancreas”; “calculus renalis” — “kidney stone”; “dens sapientiae” — “wisdom tooth”. These terminological collocations are usually represented by nomenclature names (anatomical, histological and embryological).

The group described above also includes a special subtype of terminological collocations with unique nominative component — nouns or adjectives mostly of Greek origin that do not have the word-forming relationships with other units or are characterized by the monovalent bond. For example: “vena azygos” — “azygos vein”; “vena hemiazygos” — “hemiazygos vein”; “os hyoideum” — “hyoid bone”; “musculus psoas major (minor)” — “greater (smaller) psoas muscle” (the tradition to identify the types of muscles by means of the comparative degrees of adjectives is preserved in English as well); “galea aponeurotica” — “galea aponeurotica” (a tough layer of dense fibrous tissue which covers the upper part of the human cranium) and others. Due to certain isolation, such units occupy an intermediate

position between analytical names and terminological phraseological units. These types of terminological collocations also operate in the anatomical and histological subsystems.

In this context, the issue of lexical and semantic valency in terminological units is of particular importance. For instance: “os ethmoidale” — “ethmoid bone”, BUT “lamina cribrosa” — “cribriform plate”; “fissura cerebri” — “cerebral fissure”, BUT “rima glottidis” — “glottic chink”. As one can easily observe, the code of language requires certain transformations due to terminological tradition and semantic background. Therefore, it is relevant to develop the bilingual explanatory dictionaries which will provide not only the equivalents of terminological collocations, also the information on the semantics of their components. For example, the adjective “ethmoidalis”, Greek in origin, refers to the ethmoid bone in general (“os ethmoidale”), but only its plate resembles a sieve, which is defined as “lamina cribrosa”. “Rima” refers to a narrow gap, whereas “fissure” — a gap resulting from the splitting. From the linguistic point of view, the term “rima glottidis” is based on a tautology (since *glottis* as such means “a cleft between the vocal folds”), but it is essential in terms of anatomy. The hyoid bone (“os hyoideum”) obtained its name because of the similarity between its bent shape, the snout of a swine and resemblance to the Greek letter “epsilon”, which is written in the Greek word “pig” (in Latin transcription — “hys”). As a result, there are numerous derivatives, such as: “mylohyoideus” (“mylohyoid”); hyoglossus (“hyoglossal”), “geniohyoideus” (“geniohyoid”), “stylohyoideus” (“stylohyoid”). At the same time, the terminological collocations “glandula sublingualis” (“sublingual gland”), “arteria sublingualis” (“sublingual artery”), “ganglion sublinguale” (“sublingual ganglion”), “ductus sublingualis” (“sublingual duct”), “fossa sublingualis” (“sublingual fossa”) possess quite another lexical valency and nomenclature tradition.

Another special type is represented by clinical idioms — terminological collocations with higher degree of idiomaticity that are used for nomination of symptoms, syndromes, sets

of symptoms, such as “*ulcus mutum*” — “mute ulcer” (ulcer that develops without any symptoms and is detected only via gastroscopic study or in case of sudden perforation); “*ulcus serpens*” — “serpiginous ulcer” or “creeping ulcer” (ulcer which gradually extends to one side, while on the opposite end there is healing); “*risus sardonius*” — “sardonic grin” (characteristic facial expression, resembling a smile, which is caused by convulsive contraction of facial muscles and is observed in patients with tetanus); “*claudicatio intermittens*” — “intermittent claudication” (is observed in patients with atherosclerosis of the arteries of the lower extremities; is characterized by periodic pain that appears in the calf muscles when walking or on exertion); “*cor cer(e)visiarium*” — “beer heart” (severe alcohol myocardiodystrophy, characterized by marked dilatation of heart, its impaired rhythm and conduction, heart failure); “*crusta lactea*” — “milk crust” (clearly delineated area of red skin with small scales; is in exudative-catarrhal diathesis in infants); “*delirium mussitans*” — “muttering delirium” (soundless whispering, lack of response to external stimuli, mindless repetitive movements; observed in feverish conditions); “*pulmo madidus*” — “fluid lung” (syndrome that develops due to microcirculatory disorders and lung atelectasis, accompanied by increased bronchial secretions, aspiration of vomit and disrupted drainage function of the lungs); “*respiratio amphorica*” — “amphoric respiration” (very low, soft bronchial breathing, which resembles the sound of an empty bottle; is observed in pulmonary tuberculosis); “*conjunctivitis vernalis*” — “spring conjunctivitis” (a recurrent, bilateral, and self-limiting inflammation of conjunctiva, characterized by periodic seasonal incidence; typically occurs in warm weather, in particular, in summer — thus, the term is a misnomer). The defining feature of clinical idioms is the presence of periphrastic description, expanded interpretation, definition. In these terminological collocations, the connections between the components cannot be determined via logical thinking without prior knowledge of such relations.

Terminological collocations with even higher degree of idiomaticity, whose meaning

cannot be deduced from the components due to weakened relation with the concept, form an extremely common group in medical terminology. These are binomial (trinomial, quadrinomial) terminological units with onomastic component which are always formed by means of secondary nomination [11]. We suggest to discern the following onomastic components in medical Latin and English:

a) **eponymic** collocations — according to the international tradition, medical terminology uses names of outstanding scientists and doctors who discovered or described the disease, symptom, syndrome, invented the treatment method, introduced the research method: “*facies Hippocratica*” — “Hippocratic face”, which is observed in case of severe acute peritonitis and often indicates the imminent death, is characterized by pale gray skin, sharp features, sunken eyes, cold drops of sweat on the forehead; “*succussio Hippocrätis*” — “Hippocratic succussio” (is observed in patients under conditions of simultaneous appearance of fluid and air in the pleural cavity); “*unguis Hippocraticus*” — “hippocratic nail” (nail deformity in which the nail plate in the middle part becomes wider and prominent); “*leberi morbus*” — “Leber’s disease” (hereditary optic atrophy which is detected during birth or after birth and characterized by atypical form of pigmentation, atrophy of the optic nerve, retinal vascularization); “*Behçeti syndrömum*”, “*Behçeti morbus*” — “Behcet’s syndrome”, “Behcet’s disease” (autoimmune disease from systemic vasculitis group which is characterized by recurrent course and is manifested through erosion sores on the mucous membranes of the oral cavity and genital organs, diseases of the eye (uveitis, iridocyclitis) and involvement of joints and internal organs in the pathological process; etiology of the disease at this stage of medicine development is not fully elucidated); “*Sydenhami chorea*” — “Sydenham chorea” (currently is regarded as the best researched form of rheumatic encephalitis; it usually occurs in children aged from 5 to 15 (girls fall ill twice as often as boys).

In this context, certain terminological divergences are possible. For instance,

“Basedowi morbus” — “Basedow’s disease” or “Graves’ disease” (*syn.* hyperthyroidism), a disease which is based on hyperfunction and hyperplasia of the thyroid gland, is characterized by metabolic disorders. The terms “Basedow’s syndrome” and “Basedow’s disease” are more common in Europe, whereas “Graves’ disease” is applied in the U.S. which should be taken into account when instructing medical students. This discrepancy is due to the objective historical fact: the Irish doctor Robert James Graves reported a case of hyperthyroidism in 1835, and the German physician Karl Adolph von Basedow independently described the same disease in 1840. All these peculiarities should be taken into account when translating Latin and English medical terms, since the processes of modern medical terminology formation are largely determined not only by the original lexical basis, but also by social changes in the world at large and influence of medical schools in some countries.

b) **toponymic** collocations, represented by geographical names that indicate the spread of the disease (symptom, syndrome) in a particular location, a geographic point where the disease (symptom, syndrome) was first discovered: “cholera Asiatica” — “Asiatic cholera”; “encephalitis Japonica” — “Japanese encephalitis”; “Madura mycosis” — “Madura foot” (a chronic disease that affects the subcutaneous tissue, skin and contiguous bone — the name which stems from the name of Indian city Madurai where the disease was first described in 1842); “macula mongolica” — “Mongolian spots” (dark-bluish or mulberry-colored spots on the lower back, first described in Asian newborn infants); “febris Coloradensis” *syn.* “febris montāna” — “Colorado tick fever” *syn.* “mountain fever” (viral disease common in the western US states; it is caused by tick bites and is characterized by acute febrile condition).

c) **zoomorphic** collocations are used to express the assessment of the human body by means of animalistic images, for example “cutis anserina” — “goose skin”; “cor bovinum” *syn.* cor taurinum — “bovine heart” (a massive hypertrophy of the left ventricle of the heart due to volume overload); “cor tigrīnum” — “tiger heart” (heart, on whose section under

endocardium, primarily on papillary and pectineal muscles there thin yellow and white stripes, reminiscent of tiger skin; it is observed in high level of fatty infarction); “*facies leonina*” — “leonine face” (distorted face, which is observed in patients with lepromatous form leprosy of leprosy; it is characterized by thickening of the nose, change in the form of the cheeks, lips and chin, deepening of wrinkles and folds).

However, it is necessary to observe that plenty of metaphorical terms may not be reflected in the English language: for instance, “*labium leporinum*” *syn.* “*labium fissum*” — “cleft lip” and “hare-lip”, whereas “*faux lupina*” *syn.* “*palatum fissum*”, “*palatoschisis*” — only “cleft palate” or “palatoschisis”; “*pes equinus*” — “tip foot” (the foot that touches the ground only with soft fingers and the front half of the sole). On the contrary, English terminology can produce its own metaphorical collocations: “*pectus carinatum*” *syn.* “*pectus gallinaceum*” — “chicken breast” or “pigeon breast” (anterior protrusion of the sternum); “*pes grypi*” — “bird arm” (curvature of the fingers after radial nerve palsy); Latin “*varicella*” can be rendered as “varicella”, “chicken-pox” and “water-pox” in English.

d) **botanic** components are represented by the names of plants, their parts or fruits: “*hepar moschatum*” — “nutmeg liver” (a liver dysfunction due to venous congestion); “*molar moriforme*” — “mulberry molar” (presence of rudimentary enamel cusps on the first molars; a dental condition, associated with congenital syphilis); “*haemangiōma racemōsum*” — “branchy hemangioma” (throbbing knot of soft consistency, which is localized in some organ and causes its increase). Sometimes, a Latin term can be transformed into English collocation, for instance “*urticaria*” (*Urtica* — “nettle”) — “nettle rash”.

e) **mythonimic**, formed on the basis of associations with fictional objects, such “*caput Medusae*” — “Medusa head” (the formation of a network of varicose veins around the umbilicus, which is observed in case of compromised blood circulation in the portal vein caused by its blockage with a blood clot or external compression (e.g., tumor), as well as in

patients with cirrhosis); “complexus Antigoniae” — “Antigone complex”; (daughter’s unconscious sexual attraction to her father; unlike the Electra complex, no hostility to the mother is not expressed); “complexus Clytaemnestrae” — “Clytemnestra complex” (wife’s hostility to her husband and the desire to kill him in order to maintain sexual relations with her lover); “complexus Dianae” — “Diana complex” (woman’s desire to become a man; it is manifested in cases of sexual identity disorder to the extent of changing one’s sex, and in other cases, it is reflected in the woman’s desire to master a “male” profession); “complexus Oedipi” — “Oedipus complex” (one of the main infantile complexes, described Freud; it implies the son’s sex appeal to his own mother and hostility toward his father); “complexus Electrae” — “Electra complex” (female version of Oedipus complex which is manifested in the girl’s hostility to the mother and excessive affection to his father, typically found in girls aged from three to five; “complexus Medae” — “Medea complex” (mother’s hostility to her children to the extent of the desire to kill them, and the act of aggression against children addressed to her husband, whom she wants revenge); “complexus Orestae” — “Orestes complex” (son’s desire to kill his mother), etc. Furthermore, the combinations of the abovementioned components are also possible, as in “pommum Adami” — “Adam’s apple” and the like.

Discussion. Terminological collocations are nominative heterogeneously structured units, regularly reproduced in oral or written professional discourse. They are endowed with extremely high terminological potency which is caused by their ability to almost entirely cover a specific conceptual field of a certain terminology. Depending on the relationships that exist between their components, terminological collocations are considered as idiomatic complexes with varying degrees of cohesion.

Conclusions. The proposed classification of terminological collocations (anatomical and histological, clinical, pharmaceutical) in Latin and English is based on the differentiated

approach according to their degrees of idiomaticity and semantic valency. A promising area of future research is the development of bilingual explanatory dictionaries with Latin and English equivalents of terminological collocations, as well as the information about the semantics of their components.

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Authors:

Olena M. Bieliaieva, PhD: Head of the Department of Foreign Languages with Latin Language and Medical Terminology, Ukrainian Medical Stomatological Academy; e-mail: e_lena69@rambler.ru

Yuliia V. Lysanets, PhD: Senior Lecturer at the Department of Foreign Languages with Latin Language and Medical Terminology, Ukrainian Medical Stomatological Academy; e-mail: julian.rivage@gmail.com

Ivanna V. Znamenska, PhD: Associate Professor at the Department of Foreign Languages with Latin Language and Medical Terminology, Ukrainian Medical Stomatological Academy; e-mail: ivanna.znamenska@yandex.ru

Inesa V. Rozhenko: Lecturer at the Department of Foreign Languages with Latin Language and Medical Terminology, Ukrainian Medical Stomatological Academy; e-mail: inro@ro.ru

Nataliia M. Nikolaieva: Lecturer at the Department of Foreign Languages with Latin Language and Medical Terminology, Ukrainian Medical Stomatological Academy; e-mail: dalila023@yandex.ru

Correspondence address: Yuliia Lysanets, 15 B Davydovskiy Lane, Ap. 21, 36004 Poltava, Ukraine. e-mail: julian.rivage@gmail.com