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Latin as the language of medical terminology: some remarks on its role and prospects

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Summary

The present paper offers an up-to-date view of the status of Latin as the language of medicine, namely in its terminological component. It is concerned in greater detail with the three basic terminological vocabularies in which a doctor cannot so far manage without its knowledge. In this sense a primary rank is occupied by anatomical nomenclature whose international version remains Latin in the full extent. A more varied picture is presented by the clinical disciplines where, apart from Latin terms, expressions of ancient provenance have been applied in a large measure in the form of ethnic languages. At the same time, particularly in view of the needs of computerisation, repeated attempts have appeared to support English, which has the greatest chance of becoming a new language in the particular region of clinical medicine. In pharmaceutical terminology Latin has, for the time being, remained a functioning means of international communication, guaranteed by the European Pharmacopoeia (1996) and by the corpus of International Non-proprietary Names (1992, 1996), even though in the future an ever stronger competition of national languages should be taken into account.

Key words: Latin; language of medicine; anatomical nomenclature; clinical terminology; pharmaceutical Latin

Introduction

The branches of science in which Latin has traditionally found its application involve indisputably medicine. While until the close of the Middle Ages a medical text not written in Latin was a rare exception, modern languages began to gain ground with increasing intensity from the 16th century on. Although in France there even was a court case held against a certain doctor named Rivière, in which he was accused of not being actually able to be a doctor because he did not have a good command of Latin [1], it was in France that Latin first started retreating from medicine (cf. [2]), followed by Italy and later England. On the other hand, in Germany and in the central European area Latin survived even in teaching until as late as the 19th century [3]. The doctors themselves were expressing dissatisfaction with this state of affairs; e.g. the well-known German doctor L. Schönlein mentioned in one of his letters in 1839 that using Latin in clinical instruction was a considerable impediment. In the natural sciences, which greatly influence medicine, so many new terms have developed that seeking Latin words for them would be in his opinion a waste of time. What remains is either sacrifice new discoveries to the genius of the ancient world or violate the language [4]. The result of these considerations was that in 1840 L. Schönlein decided to deliver his inaugural lecture for the Berlin Clinic in German. Similarly, the reputed Viennese clinician J. Škoda regarded Latin to be a burden. However, in 1846 he was forced to translate his inaugural lecture into Latin at the last moment [5]. He had, at least at the end of it, condemned the use of Latin and declared: "Medicinam a linguae Latinae onere liberare conabor" (i.e., I shall strive to free medicine from the burden of Latin) [6]. In the course of the 19th century this requirement could be fulfilled at last. For example, at the medical faculty in Prague, some disciplines were read in Latin until the year 1848 [7]. But even after the abolishment of Latin as a teaching and scientific language it has retained its nominating function, and has preserved a permanent position in the key component of the language of medicine terminology.

Despite the obvious retreat of Latin from the medical terminology in the 20th century, professional communicative acts in the national languages have so far been realised with the use of international Latin-Greek terms. This state follows from the advantages that have been generally known: terminological continuity, on the one hand

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as regards space (it is a worldwide, universal terminology, not bound to any nation), and on the other hand as regards history (terms have been used in a more or less unchanged form for over 2000 years). Apart from this, Latin and Greek constitute a unique stock which may also be drawn upon in case of the need of creating a new term. The incomprehensibility of the two languages for the patient is a specific moment of preference, as it is not always in his or her interest to understand the utterances of physicians. Thus the doctor speaks an incomprehensible language and, through a reversed logical process, the impression may arise that if somebody uses an incomprehensible terminology, she or he is a good doctor. We might designate this phenomenon as the mystery of the foreign-language medical communication at the doctor versus patient or professional versus layman level. This was already discovered by Pliny the Elder (Naturalis historia 29,8,17), who claimed, when speaking about ancient Romans who did not know Greek, that such people "minus credunt, quae ad salutem suam pertinent, si intelligunt" (believe less what regards their own health, if they understand). In modern times Montaigne (Essais 3,11) expressed himself similarly: "Maiorem fidem homines adhibent iis quae non intellegunt" (People trust more what they do not understand). However, with the decreasing knowledge of Latin in the new generation of doctors there is the menace of the risk referred to by a certain Slovakian professor at the faculty of medicine who complained that as he spoke Latin while at the patient's bedside so that the patient might not understand, the medical students did not understand either.

Furthermore, it should be noted that in the last century there appeared a new phenomenon which was menacing the special terminological function of Latin in modern medicine – the English language. There exist contradictory views of its status and perspectives. These range from H. Lippert's assertion [8] according to which English has taken over the role of Latin in medicine, to the opinion of the well-known German historian of medicine H. Schipperges [6], who states that Latin with Greek "have masterfully outlived" not only the Arab influence in the Middle Ages, but also the fierce onset of English in the 20th century. Based on this experience he infers that in the future the contemporary English pressure will only appear as a historical interlude. We are rather inclined to accept this conclusion because, besides other things, English medical terminology is predominantly Latin or Latinate.

When taking a cursory glance at the English anatomical nomenclature, one is likely to note that there is Latin present not only in the nominative plural of some of the nouns, e.g.: *fascia – fasciae*, *sulcus – sulci*, but that there also occur nominative plurals of some adjectives, e.g.: *chordae tendineae*, *foramina nervosa*, *rami communicantes*. Furthermore, one will also find nouns in genitive singular and genitive plural, e.g.: *orbicularis oculi/oris*, *crista galli*, *levator anguli oris*, *vasa vasorum*, *quadratus lumborum*, graded forms of Latin adjectives, e.g.: *scalenus minimus*, *latissimus dorsi*, *levator palpebrae superioris*, *longissimus capitis*, and even purely Latin multiple-word terms, e.g.: *flexor digiti minimi brevis*, *levator labii alaeque nasi*. When Latin forms are borrowed, no system is observed in the English nomenclature. We have registered numerous instances of pairs in which the English version of the term or of its component is applied at one time, and the Latin version at another time, e.g.: *arteria thyroidea ima – deepest layer of subcutaneous tissue*, *foramen magnum – mental foramen*, *major/minor salivary glands – greater/lesser vestibular glands*. (The examples used are given in Terminologia Anatomica [9].)

A similar situation is faced in clinical terminology. Some terms of Graeco-Latin origin are presented in an English variation, i.e. mainly with Anglicised suffixes, e.g.: *peptic ulcer*, *thromboembolic pulmonary hypertension*, *acute viral gastroenteropathy*, *congenital omental cyst*. Others are used by the English professional terminology in their original Latin wordings (naturally with an English pronunciation), e.g.: *salpingitis*, *nephrolithiasis*, *colitis cystica profunda/superficialis*, *pseudomyxoma peritonei*, *tinea unguium/manuum/pedum/capitis* (examples taken from the International Nomenclature of Diseases [10]). Therefore, it is debatable whether the English medical terminology can at all be reasonably mastered without the knowledge of basic Latin.

Anatomical nomenclature

The following part of our paper will focus, in a brief survey, on the three most important corpuses of terminology and on the role which Latin plays in them at present. The first place has to be reserved for the language of anatomy, where it has gained the firmest position. All of the anatomical nomenclatures produced so far have used Latin as their base. A first legalisation and official acknowledgement of the Latin anatomical nomenclature was reached thanks to the German anatomists at a congress of the Anatomische Gesellschaft in Basle in 1895. This step had resulted from an urgent need in its time. The nomination system had proved to be quantitatively saturated and confused to the extent that it rendered communication impossible, and thus it menaced at the same time scientific research and the study of medicine. The *Basiliensia nomina anatomica* (BNA, 1895) were then, apart from the original disunited terminology, being used in anatomical institutions

and in professional publications until the year 1935 when, in Jena, it was again German specialists who adopted another project of their own, differing in many factual and linguistic aspects from the preceding project. The time of the origin of the *I(J)enaiensia nomina anatomica* (I(J)NA, 1935), falling within the era of fascism, probably foreshadowed the adverse fate of this codification. At the same time, however, it complied with the highest criteria from the point of view of language, because in this case classicists had also been taking part in the preparatory work in the form of consultations [11]. After the Second World War this corpus was rejected at a suggestion put forward by American and Canadian anatomists, and a decision was drawn to come back to the Basle names, which were subjected to a conservative and thus only minimal revision. The subsequent efforts, co-ordinated since 1950 by the newly established International Anatomical Nomenclature Committee – IANC, resulted in a third standardisation called *Parisiensia nomina anatomica*, according to the venue of the authorising congress (PNA, 1955). From that time the Parisian nomenclature, later (from 1965) referred to as *Nomina anatomica* (NA) for short, has been published in six revised editions worked out within the competence of the abovementioned committee. Its principal intention was to reflect the current requirements, primarily to introduce new terms for new concepts and to eliminate any shortcomings found both on the factual and linguistic levels. Due to serious objections relating to organisation and to persistent technical disputes between the International Federation of Anatomical Associations (IFAA) and the nomenclature committee, which culminated with the publication of the sixth edition in 1989 in a form showing little respect for the comments of a part of the IFAA members, a further committee was established under the auspices of the Federation (Federative Committee on Anatomical Terminology – FCAT). It was charged with elaborating "the official terminology of the anatomical sciences" [12], based on consultations with all the anatomical societies and emphasising the principle of democracy in this collaboration. The key tasks involved the naming of new structures, the introduction of different terms and those so far used by clinicians only. In addition, a request was presented that the future versions should meet the demands of all users, both in theoretical and in clinical disciplines. On the whole, this procedure may be understood as an attempt at changing over to a regulated, yet considerably more liberal treatment of terms. This is in obvious contradiction to all the preceding tendencies that had been striving deliberately to eliminate synonymous expressions. Following unsuccessful attempts at establishing a contact to IANC, the new team chose the 5th edition of NA, published in 1983, as its starting point. They at first prepared a working version, which they offered for a wide international evaluation whose numerous suggestions were incorporated in the final version. Then, in 1998, a new corpus of anatomical terms was published, called *Terminologia Anatomica* [9]. It is worth mentioning that the FCAT confirmed Latin expressis verbis as the language of "definitive terminology". This had previously happened only once, at the 8th International Congress of Anatomists in Wiesbaden (1965). In his article presenting the new nomenclature to the expert public, I. Whitmore [12], chairman of the FCAT, considers it necessary to explain the reasons for such decision to possible sceptics. He points out that Latin as a dead language no longer develops and does not belong exclusively to any country or nation. Its use in terminology can, according to Whitmore, be characterised as global and "non-secular", i.e. destined for the whole world and professional layers. This means that, out of the number of advantages that classical languages offer, it is constancy, international character, and neutrality (unlike national languages) that are accentuated. The professional benefit of the new corpus of nomenclature was assessed favourably by J. Drukker [13]. In conclusion of this section we would like to remark that all the editions of Nomina anatomica, including the latest, bear evidence of non-participation of Latinists in their revision, which unnecessarily decreases the linguistic level of the text (cf. [14]).

Terminology of clinical medicine

A substantially more complicated and less consistent image is provided by the terminology of the clinical disciplines. It is comprehensible because, first, its range is much larger (up to 60 thousand terms according to some estimates) and, second, there is a difference between the descriptive disciplines such as anatomy and histology on the one hand, and clinical medicine, which undergoes far more serious upheavals, on the other. The causes of some diseases have namely been unknown as yet, and there even appear new diseases whose names are later subject to the development of opinions on their origin, therapy, and the like.

Clinical terms as well as terms relating to pathological anatomy may be encountered in medical literature, in the doctor's current practice when writing out case records, in diagnoses relating to pathological anatomy, and in normative handbooks of medical terminology. As far as the use of terms in the literature is concerned, apart from some new expressions coming from English, e.g. in Czech *stres*, *by-pass*, *katgut / ketgat*, there still prevail traditional terms of Graeco-Latin origin,

though ever more frequently in the national language forms, e.g. (Czech / Slovak) *gastritida / gastritída*, *hysterektomie / hysterektómia*, *hematom / hematóm*, *encefalopatie / encefalopatia*, *premedikace / premedikácia*. However, this does not hold absolutely, because there also exist publications which use Latin consistently, and sometimes even in a form surprising for the present day. For example, in the Slovakian Vademecum medici [15] there occur constructions such as *hyperkinesis involuntaris de origine extrapyramidali*, *morbus ex irradiatione*, *paralysis nervi facialis peripherica*, and also AIDS in the Latin form *syndroma immunodeficientiae acquisitae*. The Czech text [16] does not avoid Latin either, although domesticated terms prevail, e.g.: *pseudoappendicitis* (p. 94), *acanthosis nigricans maligna* (p. 512), *erythema exsudativum multiforme* (p. 512), *lichen ruber planus* (p. 513), *mastopathia chronica cystica* (p. 357).

When writing case records, doctors in our central European geographical area have still been prioritising Latin terms, even though they sometimes deliberately facilitate their situation by profusely using abbreviations or circumventing oblique cases. For example, instead of *status post bronchitidem* they write: *bronchitis*, *status post*. It is true that abbreviations do accelerate work, but at the same time they cause the complete and correct wordings gradually to disappear from knowledge so that quite a number of doctors have no longer an active command of them.

From a linguistic point of view the most difficult task is represented by diagnoses relating to pathological anatomy where it is often necessary to form long phrases consisting of many words in various grammatical cases, e.g.: *Metastases neoplasmatis maligni ad nodos lymphaticos bronchiales*, *tracheobronchiales dx.*, *sin.*, *paratracheales*, *mediastinales ant. et cervicales profundos inf. l. dx. et ad corpus vertebrae thoracicae IV et XII; Decubitus reg. sacralis et glutaeae lat. sin.*, *calcanearis lat. utque*, *partis lateralis dorsi pedis sin.*, *reg. trochantericae lat. dx. et reg. femoris post. lat. sin. et patellae lat. dx*. It is no wonder that here too Latin sometimes happens to be abandoned, being replaced with terms of Graeco-Latin origin but in the national language form. As can be seen, these texts like previous ones abound in abbreviations.

Within the scope of lexical handbooks, medicine has had at its disposal for quite a long time only the statistical classification of diseases issued by the World Health Organisation (WHO) in a new revision every ten years; this, however, is not a real terminological instruction but serves just statistical purposes. The chaotic situation in clinical terminology has recently instigated several attempts at its standardisation, which mainly react to the current demands of computerisation. The projects SNOMED [17, 18] and GALEN [19] have been well known. In 1979 the American edition of SNOMED (Systematized Nomenclature of Medicine) was issued. It is not based on one initial language (e.g. on Latin), but the individual languages are supposed to elaborate their own versions (e.g. the German version appeared in 1984 [20]). For the SNOMED authors there is no problem about Latin; the introduction lacks even the slightest mention of its role in medicine, although the traditional Graeco-Latin terms are used throughout the text, of course besides frequent Anglo-Americanisms (SNOMED, 1984). The task of the GALEN project (Generalised Architecture for Languages, Encyclopaedias and Nomenclatures in Medicine), realised in the years 1992 to 1995, was to make "a semantically valid model of clinical terminology, represented in a formal language, and associated with sophisticated support for different natural languages and conversion between different coding schemes" (www.cs.man.uk/mig/galen). It was followed up by another project called GALEN-IN-USE [21], realised in the years 1995 to 1999 in co-operation with the European Federation of Classification Centres. Let us add that both WHO and CIOMS (Council for International Organizations of Medical Sciences) also came with the initiative to elaborate an internationally unified and recognised terminology designed for global use. Between the years 1979 and 1992, seven volumes of IND (International Nomenclature of Diseases [10]) appeared, which provided both the recommended names furnished with definitions and the rejected synonymous expressions for infectious and parasitic diseases, as well as diseases of the respiratory, gastrointestinal, cardiovascular and genitourinary systems, and disorders of metabolism, nutrition, and glands with endocrine secretion. The purpose of these corpuses is to supplement the international statistical classification of diseases with a standardised list. The nomenclature presented is compiled in a somewhat peculiar English, which often vaguely recalls Paracelsian individual combination of German and Latin. It is in fact a special linguistic construct, which is well described by the term "lingua anglatina" or "Englatin", inspired by the expression "Czenglish" for English affected by Czech [22]. For example: *oesophageal web due to dyskeratosis congenita syndrome*, *adenocarcinoma of the appendix*, *acute/chronic cor pulmonale*, *agenesis of the ductus deferens*, *congenital stenosis of the urinary meatus*, *leiomyoma of the cervix uteri*. The obligatoriness of this nomenclature is debatable and many doctors do not even seem to have taken notice of it. According to information from the CIOMS secretariat the work on this extensive project has been interrupted for economic reasons.

On the other hand, we have a fresh experience from the Czech Republic. For the needs of the Faculty Hospital in Brno, a computer programme was developed named PFANNENSTIEL (1998), whose initiators had decided in favour of the Latin names of diseases, injuries, and even medical procedures. Based on this material one can convince oneself that Latin commands plenty of means of expression suitable for communication of both scientific and factual information in contemporary

medicine. For example: *endoresectio endometrii per hysteroscopiam*, *microabrasio cavi uteri*, *partus non progrediens*, *pseudohermaphroditismus masculinus / femininus*, *fixatio gypsea membri inferioris completa*, *myringoplastica per prothesim*, *resectio vesicae urinariae cum reimplantatione ureteris*, *nephrectomia bilateralis donoris mortui*, *asphyxia livida intra partum*.

Pharmaceutical Latin

A third area where Latin has been traditionally preserved is represented by pharmaceutical and pharmacological terminology. For prescribing medicaments, some of the countries have to date availed themselves of what is called prescription-related Latin, which in full measure respects the original linguistic usage. In order to master this significant part of his professional activity on the required level, a doctor has, among other things, to acquire the specific lexicon as well as a model of the grammatical structure of the prescription-related text, particularly the relationships between the address (Invocatio) and the structural components of the proper prescription (Praescriptio). The names of the individual remedies have the form of a genitive with an attributive partitive function, and the expressions superior to them and indicating the dose data (given in grams as a rule) are placed in the objective accusative supplementing the imperative form "recipe". The terminology of subscription and/or signature, which contains instructions on the preparation, form and way of dispensation of the drug, and/or other instructions destined for the chemist, remains unchanged in the long term; e.g.: *Misce fiat solutio modo aseptico*, *Da cum formula*, *Adde guttatorium sterile in capsula*, *Divide in doses aequales No V (quinque)*, *Sterilisetur*, *Ne repetatur*, *Ad usum medici*, *Sub signo veneni*, and the like. On the other hand, the official names of the drugs and adjuvant substances, medical preparations and health care means, i.e. of components which are usually set as normative in the pharmacopoeias, have undergone marked changes during the last decade. In the Czech Republic, the Czech Pharmacopoeia of 1997 [23] and the Addendum of 1999 [24] are currently in validity; in compiling them, a harmonisation of their contents with the European Pharmacopoeia [25] as an internationally recognised European standard was undertaken for the first time. In the case of medicines, this has led to a transition from the traditional Latin names currently used in central European pharmacopoeias to an international nomenclature which, though being also Latin, differs quite essentially from the original one in formally grammatical and lexical aspects. It takes as the starting point international unprotected names (International non-proprietary names /INN/ [26]) with Latin as the base wording, which is supplemented with an English, French, Russian, Spanish, or also German version. In the case of names denoting binary compounds and salts or esters, which had traditionally been formed by a nominal phrase with an attributive adjective, there occurs transformation of the adjectives to nouns, and the originally dominating substantive element gets into the position of an appositional adjunct with explicative meaning, e.g.: *calcium oxydatum → calcii oxidum*, *ammonium chloratum → ammonii chloridum*, *natrium salicylicum → natrii salicylas*, *kalium nitricum → kalii nitras*, *natrium nitrosum → natrii nitris*. Obviously by analogy, a change has been undertaken in the word order of the pharmacopoeial names of plant drugs, which are also realised by means of noun phrases with appositional genitival adjuncts, e.g.: *Uvae ursi folium*, *Valerianae radix*, *Anisi stellati fructus*, *Lini semen*, *Calendulae flos*, *Quercus cortex*, *Acaciae gummi*, *Melissae herba*. The formally identically constructed names of the other drugs and preparations have also been modified, e.g.: *Sesami oleum*, *Belladonnae folii extractum siccum normatum*, *Citri etheroleum*, *Glyceroli suppositorium*, *Iodi solutio aquosa*, *Natrii iodidi solutio*, *Anisi spiritus compositus*, *Zinci oxidi unguentum*, *Acidi borici aqua ophthalmica*. Thus, for the first time in terminology, there appears anteposition of an appositional substantival adjunct instead of the current postposition. However, the word-order adjustment is not carried out consistently and, not infrequently, the original ordering is preserved, e.g.: *Spiritus saponis kalini* (but *Camphorae spiritus*), *Lana cellulosi regenerati* (but *Cellulosi pulvis*), *Praeparata insulini iniectabilia* (but *Insulini solubilis iniectio*), *Adeps lanae*, *Alcoholes adipis lanae* (but *Alcoholis cetylici cremor*). All the above-mentioned modifications bear traces of a transitory period and cause considerable difficulties in introducing them into professional and especially teaching practice. Even though national languages have been favoured in dispensing prescriptions in some of the countries of the European Union, in the central European area Latin has continued to be preferred and the standard international nomenclature of drugs and auxiliary substances has generally been based on the Latin version. The Latin version of the pharmacopoeia has, among other countries, been used in Germany, Switzerland, Yugoslavia, the countries of the former Soviet Union and, which is especially remarkable, also in Japan and China.

Phraseological collocations in medical Latin

Phraseological expressions with medical content may be conceived as a separate group. They represent quantitatively no large but, from the point of view of their practical utilisation, a non-negligible and at the same time inseparable part of the technical language. In a formal respect they are, as a rule, composed of noun phrases of which at least one element is restricted as to meaning and function exactly to the corresponding collocation. They have continued to remain a living component of the communication outfit of a modern doctor. Their popularity consists, besides the respect for tradition, in the ability to express economically and succinctly, like terms, often complicated factual contents, which in the national languages mostly correspond to multiple periphrastic expressions. For example: *facies Hippocratica* (hippocratic face; a face showing the critical state of a disease, the expression of a patient's face before death), *signum mali ominis* (a sign of ill omen, unfavourable sign as regards prognosis), *vitium artis* (defect in /medical/ art, designation of the subject of a doctor's criminal and civil liability), *excisio probatoria* (tentative excision of a morbid focus for the purpose of histological examination), *circulus vitiosus* (vicious circle, designation for simultaneous occurrence of morbid processes affecting each other unfavourably), *experimentum crucis* (crucial experiment, a decisive test supposed to show which of several hypotheses is correct), *(prognosis) quoad vitam* (a forecast so far as life is concerned, i.e., preservation of life, or of the quality of life), *intervalla lucida* (lucid intervals, clear moments, brief returns to consciousness).

Conclusion

As follows from the preceding exposition, Latin has been so deep-rooted in medical terminology and thus also in medicine, and at the same time constantly so productive that its presence in it appears as a natural matter of course (though there do exist certain geographical variations in the individual areas). This fact is still noticed in earlier publications (cf. [27]), while in many of the more recent ones it is only, as if implicitly, presupposed but silently avoided (cf., e.g., [28] and [29]). In any case, it can be confirmed that in the course of a development lasting more than two millenniums, an extraordinarily influential and viable tradition has been established, such as hardly any other competitive substitute may fully withstand. Thus any possible doubts about further functioning of Latin in medicine may be regarded as unsubstantiated. In this sense let us add here a hitherto topical Neo-Latin adage "Invia est in medicina via sine lingua Latina" (The way without Latin is impassable in medicine), which poignantly reflects the situation as characterised in the present article. This also accounts for the need and legitimacy of teaching Latin terminology at medical faculties (cf. [30]), whose purpose is primarily to provide students and future clinicians with a functional instruction on precise and linguistically correct usage of the terminological apparatus. One can well speculate that, on the one hand, it is a lucky solution for Latin in medicine to have its "continuation" in the English medical terminology because it so maintains its unique standing and, on the other hand, for the English medical terminology its Latin origin is an advantage because in that way its spread is accelerated and facilitated. Finally, in an effort to offer a more comprehensive view, let us recall the aphoristic expression of the already quoted German historian Schipperges [5], in which the problem of Latin in medicine, and/or that of Latin versus English, is made relative using the experience of an enlightened expert: "The old doctor spoke Latin, the new doctor speaks English, the good doctor speaks to the patient."

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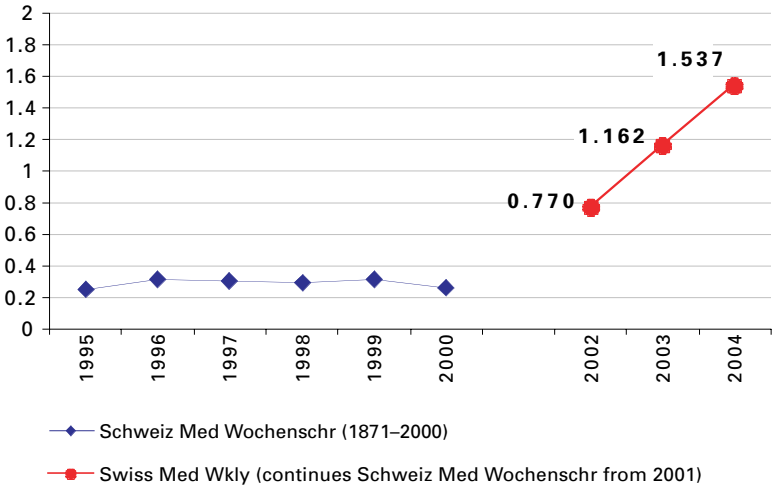

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