A Brief History of Geriatrics

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D AGE has been with us since the dawn of time. The handicaps brought about by old age were well known in ancient Egypt. The old Egyptians actually made considerable efforts towards finding eternal youth. The *Smith Papyrus* (named after the man who discovered it in Luxor-Egypt in 1862, Edwin Smith, an American collector of antiquities) is the oldest known medical text (3000-2500 B.C.) and is also considered the first treatise on surgery, containing, among other things, medical prescriptions against ageing: numerous stupendous recipes intended for transforming an old man into a young one, with the aid of makeup mixtures meant to conceal the signs of ageing. The Egyptians' clinical knowledge about ageing, dating back to 2000 B.C., is astounding. They identified the characteristics of ageing and the secondary changes triggered by this process, as seen in the following description of this phenomenon, provided by Ptah-Hotep (2400 B.C.) (an official from the reign of Pharaoh Djedkare Isesi, at the time of Egypt's fifth dynasty):

"O Prince my Lord, the end of life is at hand; old age descendeth—upon me—; feebleness cometh, and childishness is renewed. He—that is old—lieth down in misery every day. The eyes are small; the ears are deaf. Energy is diminished, the heart hath no rest. The mouth is silent, and he speaketh no word; the heart stoppeth, and he remembereth not yesterday. The bones are painful throughout the body; good turneth into evil. All taste departeth. These things doeth old age for mankind, being evil in all things. The nose is stopped, and he breatheth not for weakness (?), whether standing or sitting." [Brown, 1923]

The Egyptians were the first to show an interest in ageing, as revealed in the *Ebers Papyrus* (1500 B.C.) (discovered by the German Egyptologist Georg Ebers in Luxor-Egypt in 1873): "the weakness we may detect in the elderly is caused by the dilation of the heart."

The Assyrians were also concerned about ageing, various writings from the 15th century B.C. featuring solutions against hair turning grey and the loss of visual acuity.

Charaka Samhita Sutra is an ancient Indian text of internal medicine (3rd century B.C.) written by Charaka (120 chapters divided into 8 parts). It is the oldest of the three treaties of Ayurvedic medicine (āyus – "life" and veda – "science") (*Charaka Samhita Sutra*, Sushruta Samhita and Vagbhata Samhita). Ayurvedic medicine is a traditional form of

Indian medicine whose origins go back to the Vedic period, when the *Vedas*, the oldest sacred Hindu texts, were written; the earliest writings belong to the legendary *Dhanvantari*, who received these teachings from *Brahma*, the Hindu God of creation. According to this treatise, health and disease were not predetermined, so life could be prolonged through a self-caring lifestyle. Charaka is assumed to have made the following statement: "A physician who fails to enter the body of a patient with the lamp of knowledge and understanding will never be able to treat diseases. He must first assess all the factors, including the environmental ones, which influence a patient's illness, and only then prescribe treatment. It is more important to prevent the occurrence of a disease than to look for a cure."

Sushruta Samhita (discovered in 1889) is a Sanskrit text about surgery, attributed to Sushruta (the father of surgery; 6th century B.C.). Consisting of two parts (*Purvatantra* and *Uttara-tantra*), the text covers multiple medical branches, such as: pediatrics, geriatrics, toxicology, psychiatry, diseases of the ears, nose, throat and eyes. According to this document, an individual's health was the result of a balance between the body's elementary substances. The disturbance of this balance was the root cause of all somatic and mental illnesses, as well as of the process of ageing. This book presented the idea that there existed in man certain *seeds of death*, which relentlessly scheduled the individual's age limit and, implicitly, death.

Ayurvedic medicine divides the length of life into several stages: childhood (until 16 years), adolescence (*vivardhamana*) (16-20 years), youth (*vouvana*) (20-30 years), maturity (*sampoornata*) (30-40 years). The interval between 40 and 60 years of age is considered a period of deterioration (*parihani*), while the period after the age of 60 years, during which the body's composition and functionality undergo decay, is regarded as old age (*vardhakya*).

As early as the 6th century B.C., Taoism promoted old age as the epitome of life and fulfilment. The *Inner Cannon of the Yellow Emperor* Huang-di (Han dynasty, 200 B.C.-200 A.D.) gathered together old traditions based on the principles of Taoism. Until 200 B.C., the Far Eastern and, in particular, the Chinese conception about ageing was essentially philosophical. In this medical text, ageing is presented as a form of illness related to the imbalance between *yin* and *yang* in the body. Confucius (551-479 B.C.) (a Chinese philosopher and thinker) stated that the more advanced the age of a person, the higher the respect for that individual.

Survival into what we call old age was not unusual even in Ancient Greece (Sophocles lived until the age of 91 years; Socrates–98 years; Plato–81 years; Euripides–78 years).

Greek medicine, which, like in the case of all ancient peoples, mixed religion, magic and science, evinced a concern for geriatric issues in the writings of Hippocrates (460-370 B.C.?), the most renowned physician of ancient Greece, deemed to be the "Father of Medicine." According to Hippocrates, health was the result of a balance between the four bodily humors: yellow bile, blood, phlegm and black bile. The *Aphorisms* of Hippocrates contain numerous remarks regarding the manifestations of the ageing process. Perhaps the most expressive is the following: "Τοισι δέ πρεσβύτησι, δύσπνοιαι, κατάφφοοι βηχώδεες, στραγγουρίαι, δυσουρίαι, ἄρθρων πόνοι, νεφρίτιδες, ίλιγγοι, ἀποπληξίαι, καχεξίαι, ξυσμοί τοῦ σώματος ὅλου, ἀγρυπνίαι, κοιλίης καὶ ὀφθαλμῶν καὶ ῥινῶν ὑγρότητες, ἁμβλυωπίαι, γλαυκώσιες, βαρυηκοΐαι." ("To old people dyspnoea, catarrhs accompanied with coughs, dysuria, pains of the joints, nephritis, vertigo, apoplexy, cachexia, pruritus of the whole body, insomnolency, defluxions of the bowels, of the eyes, and of the nose, dimness of sight, cataract (glaucoma), and dullness of hearing.") (*Aphorisms* by Hippocrates; translated by Francis Adams)

Marcus Tullius Cicero (106-43 B.C.) is also known for his concerns in the field of philosophy, in addition to the important role he played towards the end of the Roman Republic, his numerous speeches (58) and his preoccupations with the art of oratory (*De* oratore libri tres, Partitiones oratoriae, or the treatise Orator), being considered one of the fathers of ancient oratory. His philosophical works included: *De republica* (on the state—a political dialogue on the topic of the best forms of governance and the qualities of the ideal ruler); *De legibus* (on laws—a political dialogue on the topic of legislation and the ideal type of constitution); *De natura deorum* (on the nature of the gods a work on the topic of the existence and essence of divinity); *De divinatione* (which approaches the topic of divination as grace and as an art of predicting the future); *De fato* (a disquisition on the problem of destiny); and last but not least, *Cato Maior de Senectute* a dialogue about old age between Cato the Elder [84 years old], Scipio and Laelius; the latter, who are of adult age, are having an amiable discussion with Cato, admiring the way he has aged:

"Scipio: Saepe numero admirari soleo cum hoc C. Laelio cum ceterarum rerum tuam excellentem, M. Cato, perfectamque sapientiam, tum vel maxime quod numquam tibi senectutem gravem esse senserim, quae plerisque senibus sic odiosa est, ut onus se Aetna gravius dicant sustinere". (I have noticed that old age never seemed a burden to you, while to most old men it is so hateful that they declare themselves under a weight heavier than Aetna).

This introductory phrase emphasizes that "successful ageing" was not commonly encountered in Antiquity. *Cato Maior de Senectute* is not a medical treatise, but it is the only work in Latin from the era in question that was dedicated exclusively to the elderly.

Claudius Aelius Galenus (129-200), a Roman anatomist, physiologist, clinician and researcher who was born in Greece, is considered the father of modern medicine and pharmacology. His oeuvre, comprising over 500 works related to anatomy, physiology, pathology and multiple forms of treatment, underlies the school of thought known as Galenism, which dominated medical thinking until the time of the Renaissance. His astute observation, thinking and deduction skills made him the true successor of Hippocrates,

and his opinion that patient care should be the main objective of medicine was the cornerstone of modern pharmacology. He outlined, among other things, a new theory of ageing, combining the Hippocratic theory of humors and that of Aristotle's inner heat, in his work *De Sanitate Tuenda*. For him, old age was an intermediate state between illness and health. Old age was not a pathological condition, but a stage of life in which all bodily functions slowed down.

In the Middle Ages there were few medical writings and, implicitly, references to ageing. Moreover, during this period, medical texts made no references to children, women and elderly people. The medicine of those times perpetuated the Hippocratic, essentially preventive tradition. In fact, patient care during that time tended to be the preserve of monasteries.

Ibn Al-Jazzar Al-Qayrawani, known by his Latinized name Algizar (898-980), is the author of a work entitled *Kitab Tibb al-Machayikh*, which addresses sleep and memory disorders among the elderly.

Ishaq ibn Hunayn (?-910), the son of Hunayn ibn Ishaq (Johannitius), is the author of the work entitled *Treatise on Drugs for Forgetfulness* (*Risalah al-Shafiyah fi adwiyat alnisyan*).

Abu Ali Ibn Sina, better known by his Latinized name Avicenna (980-1037), was a Persian physician and researcher, considered by the Arabs to be the "third Aristotle." He wrote *The Canon of Medicine*, completing it in 1025. This is a 14-volume medical encyclopedia, written in Arabic, based on a combination of Avicenna's own experience, the writings of Galen, Charaka and Sushruta, and ancient Persian medicine.

This is the first book that gave clear instructions about caring for elders, thus heralding modern gerontology and geriatrics. In the chapter entitled *Regimen of old age*, Avicenna said that the "elderly need plenty of sleep," that "their bodies must be smeared in oil" and recommended exercise, such as long walks and horseback riding. In the third thesis of *The Canon of Medicine*, he approached the dietary regime of the elderly, claiming that they should be fed small meals, but repeatedly. He also stated that laxative foods were most recommended for the elderly.

The Canon of Medicine recognized four periods of life: growth, adulthood, old age and senility. This is considered the most important book in the history of medicine, remaining a text of reference in medical scholarship until the early 19th century.

The Renaissance ushered in a new era in geriatric science.

David Pomis (1525-1600), a Venetian physician, was the first to propose a diagnostic and therapeutic approach to old-age diseases, such as high blood pressure, marking a departure from previous prophylactic thinking.

Georg Ernst Stahl (1660-1734) enunciated the theory of vitalism, according to which there was a vital principle in every individual, whose decline determined ageing and death.

Léon Louis Rostan (1790-1866) was the first to describe, in 1817, a particular form of asthma in the elderly (*Rostan's asthma*), later known as paroxysmal nocturnal dyspnoea.

In 1840 Prus published the first treatise on the pathology of the elderly, a necroptic study on 390 people aged between 60 and 90 years, which highlighted 149 respiratory

diseases, 101 diseases of the central nervous system, 64 cardiovascular diseases, 49 digestive tract diseases, 8 liver diseases and 19 unclassified diseases.

In the United Kingdom, George Day published *Diseases of Advanced Life* in 1849, describing some of the "giants" of modern geriatrics: urinary incontinence and dementia.

In 1853, J. V. Reveille Parise published, in Paris, *Traité de la vieillesse, hygiénique, médi*cal et philosophique, perhaps the most complete work of gerontology of that era.

The lectures delivered by Jean Martin Charcot (1825-1893) on the medicine of old age, *Leçons cliniques sur les maladie's des vieillards*, aroused special interest among physicians. These works were the result of the establishment of the first hospice units in Paris (Salpetriere, Bicetre), which admitted a large number of elderly people (over 3000). In addressing topics such as febrile diseases, rheumatic pathology and cerebral hemorrhage among the elderly, but without mentioning bedsores or cognitive damage in such patients, this work points out the epidemiological differences between the 19th century and the present.

As life expectancy increased, a major concern became the study of the ageing process or gerontology.

Michel Eugène Chevreul (1786-1889), himself a long-lived man, claimed that the study of the ageing process should be a science in itself.

Lambert Quetelet (1796-1874) asserted in 1835: "Man is born, grows and dies according to laws that have not yet been properly investigated."

At the international health exhibition organized in London in 1884, Francis Galton (1822-1911), a cousin of Charles Darwin's, formulated for the first time an equation that established the quantitative extent of various functional performance decreases (muscle strength, hearing, sight, movement speed, vital capacity) associated with ageing.

The term "gerontology" (from the Greek γέρον [geron]—elderly and λόγος [logos] to speak), was introduced in 1903 by Ilya Ilyich Mechnikov (1845-1916), a Professor at the Pasteur Institute in Paris.

As late as the 1940s, gerontology was organized into a discipline in its own right, through the establishment in 1945 of the American Society of Gerontology by James Birren, considered the founding father of modern gerontology. Two decades later he set up the first research center devoted exclusively to the study of the ageing process (the *Ethel Percy Andrus Gerontology Centre* at the University of Southern California), while in 1975 the *Leonard Davis School of Gerontology* at the University of Southern California became the first academic department of gerontology in the world.

Geriatrics, the medical specialty that deals with the problems of the elderly, is a relatively young medical branch. The term "geriatrics" was coined by Ignatz Leo Nascher (1863-1944) in 1909. He said: "Geriatrics, from Γῆρας [geras], old age, and *iatrikos*, relating to the physician, is a term I would suggest as an addition to our vocabulary to cover the same field in old age that is covered by the term pediatrics in childhood, to emphasize the necessity of considering senility and its disease apart from maturity and to assign it a separate place in medicine."

Dr. Nascher's most important work is the treatise published in 1914: Geriatrics: The Diseases of Old Age and Their Treatment, which is worth reading even today. In a review of the book from 1914, in the Canadian Medical Association Journal, it was stated that:

"Geriatrics is a new word; but there was also a time when paediatrics was also a strange word..." In June 1942, at the first meeting of the American Geriatrics Society, Ignatz L. Nascher was appointed Honorary Chairman of the society.

The need for the establishment of geriatrics as a medical specialty was also emphasized in the foreword to the book *Internal Medicine in Old Age*, written by Muller-Denham in 1942. The author stated the following in the preface: "When I had a unit for elderly patients in my suborder, I realized that my entire previous training and my long activity as head of various medical wards had not been sufficient, and I had to start it all over. It was as if, all of a sudden, I was in front of a paediatrics department; the difference was enormous."

While Ignatz L. Nascher is the father of gerontology, then its mother is Marjory Warren (1897-1960), a British physician, with initial concerns in the field of surgery. Perhaps her most important contribution, besides setting up geriatrics as a medical branch in England, in 1948 (Brocklehurst, 1997), was the concept of a multidisciplinary team in geriatrics and that of geriatric assessment, both of these concepts being operative in contemporary geriatrics.

At the *West Middlesex* Hospital in London, a hospital for chronic diseases in which elderly patients were neglected and tied down to their beds, she created the first specialized geriatrics unit in the United Kingdom. Undertaking a systematic evaluation of these patients (a geriatric assessment, in effect), she was the first to make a classification of the chronically ill elderly (chronic, but relatively mobile; continent, but bedridden; incontinent; senile, but quiet; senile, who required isolation from the rest of the patients), identifying those who could benefit from medical and rehabilitation efforts and managing, thus, to remobilize most of them and, in many cases, even to reintroduce them into their family environment.

Marjory Warren also supported a complex approach to geriatric issues, cautioning against the dehumanization of life through numbers. She stated: "In modern medical practice, suffering tends to be reduced to mathematical equations. We speak of morbidity and mortality rates, incidence of disease, and survival time. Assessment of disease in these terms gives direction to further study and indicates its urgency. But there is a danger of mistaking a calculated solution for a remedy, forgetting that finally we are treating not a disease, but a person."

Bernard Isaacs represents another important name in the history of geriatrics. He described the four "giants" of geriatrics (he coined the phrase *Giants of Geriatrics*): immobilization, instability, incontinence and intellectual impairment. Bernard Isaacs said that if evaluated closely, all these common problems of the elderly are connected to one of these giants of geriatrics.

In Romania, the beginnings of geriatrics are tied to the name of Professor Ana Aslan, PhD, the founder of the first geriatrics institute in the world, who dedicated her entire life to the study of geriatric treatment. She proved that it was possible to fight against ageing. Her desire to find the most appropriate method of waging this fight prompted her to assert, on numerous occasions, that "advanced age is a parasite of life." At the Therapiewoche Congress held in Karlsruhe in 1956, Professor Ana Aslan presented her original method of treatment. This was the first time Gerovital H_3 had been introduced to the world, followed, in the same year, by that from the European Congress of Gerontology in Basel. In the country, the clinical trial of Gerovital H_3 on 7,600 patients led to its approval by the Ministry of Health in 1957 and to the production of Gerovital H_3 ampoules by the pharmaceutical industry. Then, in 1962, the manufacturing process began for Gerovital H_3 capsules, therapeutic cream and capillary lotion.

In 1960, Ana Aslan began experimenting with a new eutrophic product which, in addition to procaine, also contained an activating and antiatherogenic factor, which granted it efficacy in therapies focusing on the nervous system and the cardio-vascular apparatus. In 1970, Ana Aslan received her fifth patent as an inventor of the eutrophic product Aslavital. In 1978, "Aslavital for infantile use" was developed, being successfully applied in the treatment of children with mental disabilities. Having become member of the Academy of Medicine in 1944 and having served as its Secretary in 1945-1948, Ana Aslan was elected as a member of the Romanian Academy in 1974.

Professor Ana Aslan was the one who created and implemented the concept of "ageing prevention" at national scale. In the period 1962-1993, 144 gerontoprophylaxis centers were established and functioned in industrial and agricultural areas, alongside 76 geriatric assistance centers, which were set up, during the period 1965-1974, by Dr. Alexandru Ciucă and subsequently coordinated by Dr. Vladimir Jucovschi (1975-1982) and Professor Ioan M. Copil, PhD (1983-1993), as heads of the Department of Social Gerontology. The Institute of Geriatrics and Gerontology organized postgraduate courses and trained, at that time, the specialists necessary for this action. A longitudinal study on the effects of eutrophic medication, unique in terms of its protraction over an extensive timeframe (30 years), was organized in the "Long-term in-patient unit," the retirement home at the Institute of Geriatrics.

She was a citizen of the world. She was consulted for the expert meetings organized by the White House, decorated with the Maltese Cross at the Madeleine Church in Paris, appointed as Commander of the Italian Legion of Honor, bestowed upon with the *Palmes académiques* order and awarded prizes by the World Health Organization. The highest acknowledgment of Ana Aslan's universal dimension and lasting memory is the inclusion of her name in the mausoleum of Hippocrates, the father of medicine, at Larissa in Thessalv.

The Academician and University Professor Constantin Bălăceanu-Stolnici, PhD, is a name of high resonance in Romanian geriatrics. Head of Department in 1974-1991 and Director of the Institute of Geriatrics and Gerontology in the period 1991-2003, he promoted the Romanian School of Geriatrics, by setting up, in 1992, the Geriatrics and Gerontology specialization in Romania.

Notes

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Abstract

A Brief History of Geriatrics

Geriatrics is a young branch of medicine that deals with the care for old people. Although in ancient times life expectancy at birth was short, less than 30 years old, advanced-age individuals were commonly encountered. Hence, concerns about the changes that accompany the ageing process, as well as attempts to explain their causes, have existed since time immemorial. While initial approaches to the phenomenon of ageing were empirical, as time went by, especially after geriatrics became a medical discipline in its own right, researches on ageing acquired a scientific character, being focused not only on identifying its causes, but also on finding ways to slow down this ubiquitous phenomenon. In Romania, less than half a century after geriatrics was defined as a medical branch, the first National Institute of Geriatrics in the world was set up, under the leadership of Professor Ana Aslan, PhD.

Keywords

Geriatrics, gerontology, old age, Ana Aslan