ANA ASLAN AND THE FIGHT AGAINST AGING: THE BIRTH OF THE WORLD'S FIRST GERIATRIC INSTITUTE

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Abstract

Ana Aslan (1897-1988) was a Romanian physician with particularly important achievements in social gerontology, considering the old age to be a disease rather than a normal physiological process. She attempted and succeeded in slowing down aging using Gerovital H3 and later Aslavital (created in collaboration with pharmacist Elena Polovrăgeanu) in therapies applied at the Institute of Geriatrics and Gerontology, the first of its kind in the world (the institute now bears her name as a sign of respect and honour). Becoming an international star thanks to the results she obtained and published, Aslan began to receive medical visits at the institute from a growing number of world-renowned personalities (Pablo Neruda, Salvador Dali, Claudia Cardinale, Charlie Chaplin) or was asked to visit them abroad (Marshal Tito, Marlene Dietrich, Lillian Gish, Aristotle Onassis). Thanks to the national and especially international exposure that brought her a steady stream of patients and due to the export of Gerovital H3, Professor Ana Aslan brought the Romanian state revenues of over 17 million US dollars per year, thus becoming an ambassador for Romania and proof of the seriousness and excellence of a communist country. As a result of the prestige she has achieved, Aslan became a full member of the Romanian Academy in 1974, as the highest recognition of the national forum of the greatest minds.

Keywords: *Ana Aslan, aging, gerontology.*

1. EARLY LIFE AND EDUCATION

Ana Vasilichia Aslan was born on January 1, 1897, in Brăila (Romania), the daughter of Mărgărit Aslan (who was 59 when Ana was born) and Sofia Popovici (20 years younger than her husband), both educated people; she was the youngest of four children. She attended Ramaşcanu College (Brăila) until the age of 13, when she lost her father, and then the family moved to Bucharest (Bărbulescu-Poli, n.d., Boerescu, 2023, WIKI, n.d.).

At the age of 16, Ana was fascinated by Aurel Vlaicu's achievements and wanted to become a pilot, even managing to fly alongside pilot Andrei Popovici in a small Bristol-Coandă aircraft. In the summer of 1915, Ana Aslan graduated from the Central School in the Capital (Bucharest) and, driven by her desire to defeat death and her fascination with the human body, decided to study medicine. Female doctors were stigmatized by the society at that time, and Sofia Aslan opposed her daughter's wishes. Ana went on a hunger strike to convince her mother to agree to her choice, and after a few days she succeeded. Ana was allowed to enrol in the Faculty of Medicine in Bucharest and began her studies on October 13, 1915. During World War I, Ana, as a student, was sent to Iaşi, where she cared for wounded soldiers in military hospitals behind the front lines, first in the infectious diseases ward and then in the surgery ward, where she met and worked alongside Toma Ionescu (1860-1926, a Romanian titan of surgery). Back in Bucharest, Ana Aslan worked in 1919 (her third year of medical school) alongside Gheorghe Marinescu (1863-1938, a Romanian titan of neurology and pioneer of Romanian gerontology) after passing her externship exam, studying the aging of the neurological system [1], alongside another doctor who was to become well known in Romania, Dimitrie Bagdasar (1893-1949, founder of the Romanian school of neurosurgery) (Bărbulescu-Poli, n.d., Boerescu, 2023). In 1921, she passed the internship exam and was accepted into the clinic run by Professor Daniel Danielopolu (1884-1955, physician, physiologist, and pharmacologist). In 1922, she completed her studies at the Faculty of Medicine in Bucharest and was appointed as a teaching assistant at Clinic II in Bucharest, where she

was also an intern. Under the supervision of Professor Danielopolu, Ana completed her doctoral thesis entitled "Research on vasomotor innervation in humans," for which she obtained her PhD in medicine and surgery in 1924 (Bărbulescu-Poli, n.d., Boerescu, 2023, WIKI, n.d.).

2. PROFESSIONAL ADVANCEMENT

Starting in 1924, Dr. Ana Aslan worked at several hospitals and also engaged in teaching activities:

- Chief cardiologist at the Romanian Railway Hospital – 1931-1935,
- Head of works at the Clinical-Medical Institute of the Faculty of Medicine in Bucharest – 1943-1947,
- Chief Physician of the University Clinical Department, Filantropia Hospital in Bucharest – 1943-1947,
- University Professor of Clinical Medicine in Timişoara – 1945-1949,
- Head of the Physiology Department, Institute of Endocrinology – 1949-1958,
- Director at the Institute of Geriatrics, Bucharest – starting in 1952 (Bărbulescu-Poli, n.d., Boerescu, 2023, WIKI, n.d.).

In these roles, Ana Aslan is recognized as the first female cardiologist in Romania and the first female professor of clinical medicine in the country.

3. THE BEGINNINGS OF GERONTOLOGY

As Ana Aslan herself confessed, it all started with a procaine injection administered to one of her students in Timişoara while she was a professor of clinical medicine; it was April 15, 1949. Upon learning of a student hospitalized with a knee blocked due to osteoarthritis, Aslan went and asked the student's permission to administer an intra-arterial injection of 1% procaine (10 cubic centimetres). Once the procedure was completed, the student was able to move his knee, and both the professor and the student were delighted. Aslan continued to administer the same procaine injection (a local anesthetic, also known as novocaine) to the student for several days, and a few days later the student was able to leave the hospital (Bărbulescu-Poli, n.d., Boerescu, 2023, WIKI, n.d.).

The results are communicated by Ana Aslan to Professor Constantin Ion Parhon (1874-1969, renowned neurologist and endocrinologist, a person with great political power at that time in communist Romania). Together, the two decide to continue their research with procaine on the elderly residents of the "I. C. Frimu" nursing home, with Aslan being appointed director of the home. The research highlights the use of procaine in order to alleviate age-related dystrophic disorders, proving the properties of procaine compared to vitamin E and various extracts (yeast, spleen, placenta, thyroid), thus laying the foundations for geriatrics and gerontology in Romania (Bărbulescu-Poli, n.d.). In 1952, the nursing home was transformed into the world's first Institute of Geriatrics, an institution where Aslan remained director until her death in 1988.

In 1951, Parhon and Aslan began a long-term experiment on a group of 25 elderly people who were administered a 2% procaine solution with a pH between 3 and 4. The experiment yielded a series of favourable results that led to a significant improvement in the general condition of the participants, including: antidepressant effects; hair growth and repigmentation (including in the pubic area); reduction or disappearance in some cases of senile spots and keratosis; increased joint mobility and muscle tone; normalization of values recorded in hypertensive patients; improvement in visual, auditory, and olfactory perceptions; improvement in the balance of Parkinson's patients; mental and neurovegetative rebalancing; improvement in skin and nail trophicity and even improvement in memory (Bărbulescu-Poli, n.d., Boerescu, 2023, WIKI, n.d.).

The results obtained over three years were published by Professors Parhon and Aslan in a monographic study entitled "Novocaine – an eutrophic and rejuvenating factor in the prophylactic and curative treatment of old age" in 1955 by the Romanian Academy Publishing House.

4. GEROVITAL H3 AND ASLAVITAL

Following the publication of the paper "Novocaine – a eutrophic and rejuvenating factor in the prophylactic and curative treatment of old age" (1955), Aslan encountered scepticism from her colleagues and voices contested the results she had obtained and published, but she did not allow herself to be discouraged. She worked hard and succeeded in formulating and creating vitamin H3, which would become known to the general public and international specialists as "Gerovital H3" (Bărbulescu-Poli, n.d.).

Together with pharmacist Elena Polovrăgeanu, Ana Aslan created the Gerovital H3 formula: 2% procaine, 0.12% benzoic acid, 0.01% disodium phosphate, 0.1% potassium metabisulfite; the final mixture always had a pH value between 3 and 4. Aslan considered this drug to be both geriatric (because it acts on mechanisms common to chronic degenerative diseases in the elderly) and gerontological (because it intervenes in the mechanisms of aging at the molecular level) (Bărbulescu-Poli, n.d., Boerescu, 2023). Among the results obtained in elderly people using Gerovital H3 we mention the following: reduction of depression and anxiety, increased will to live, accompanied by increased intellectual and physical capacities; here, one can add all the other results obtained by Aslan together with Parhon on the group of 25 elderly people.

At the 1956 Therapiewoche Congress in Karlsruhe, Germany, Aslan presented her original treatment method (Gerovital H3) to the world, and went on to present it at the European Congress of Gerontology in Basel. The results presented and promised by Dr. Ana Aslan were received with interest and enthusiasm, but there were also sceptical voices contesting the results, which is absolutely normal in science (Bărbulescu-Poli, n.d., Boerescu, 2023).

In Romania, the new drug was clinically evaluated on 7,600 patients of different ages, and based on the results, the Ministry of Health approved Gerovital H3, making it possible to move to mass production of vials containing the new drug. In 1962, other types of pharmaceutical products containing the new drug Gerovital H3 were produced and marketed: tablets, therapeutic creams, and hair lotion (Bărbulescu-Poli, n.d., Boerescu, 2023).

The treatment was patented in over 30 countries, and statistics showed that approximately 5-10% of foreign tourists came to Romania exclusively for Gerovital treatment (Bărbulescu-Poli, n.d.).

During 1960, Dr. Ana Aslan began experimenting with a new eutrophic product ("Aslavital," also developed in collaboration with pharmacist Elena Polovrăgeanu) which, in addition to procaine, contained an activating factor and an anti-teratogenic factor; which proved to be effective in the cardiovascular and nervous systems. Some sources (Boerescu, 2023) say that in 1980 Aslan and Polovrăgeanu received the patent for Aslavital, while other sources (Bărbulescu-Poli, n.d.) state that in 1970 Aslan received her fifth patent for the same eutrophic product.

The superiority of Gerovital H3 over procaine is also confirmed by the results obtained experimentally abroad by foreign doctors and researchers: Greppi and Scardigli (1961) in Italy, Abrams and Gordon, Friedman and Fudema (1963), Hracovec and Yau (1974), Mac Farlane (1974) in the USA (Bărbulescu-Poli, n.d.).

In 1974, the Institute of Geriatrics inaugurated a new clinical department in Otopeni, notable for its comfort and spaciousness, the building having previously been used by politicians of the time. Thousands of patients, especially foreigners and celebrities, came here for the revolutionary treatment. Here are some of the international personalities who were treated here: Somerset Maugham, Pablo Neruda, Salvador Dali, Miguel Asturias, Claudia Cardinale, and Charlie Chaplin. Abroad, Aslan's expertise and treatment were sought after by other personalities such as: Marshal de Gaulle, Indira Ghandi, the King of Saudi Arabia, General Franco, Marshal Tito, Marlene Dietrich, Lillian Gish, Aristotle Onassis, Jaqueline Kennedy, and many others (Bărbulescu-Poli, n.d.).

There are materials (Boerescu, 2023) that record that all these great personalities did not come personally to the anti-aging clinic in Otopeni (Romania), but sent trusted people to procure the miraculous medicine for them.

The amounts collected by the Institute of Geriatrics (which became the Institute of Geriatrics and Gerontology in 1974) for treatments, together with the export of Gerovital H3, brought the Romanian state revenues of over 17 million US dollars (Bărbulescu-Poli, n.d., Boerescu, 2023).

In 1978, Aslavital was developed for use in children with mental disabilities.

Apart from the challenges it faced (some of which were quite violent), which divided the international medical community in two, Aslan was also the target of sustained attempts to copy and counterfeit the eutrophic drug formula. Until it was approved for mass production in Romania, Gerovital H3 was falsified by countries such as Spain, the Netherlands, and Germany and sold as a product of Ana Aslan, with the boxes bearing all the original elements, including the professor's image and signature. These countries profited handsomely from these fake products. The archives of the former Securitate (an organization similar to a secret police force that had information about everyone and everything) noted that Aslan managed to take several hundred, perhaps even thousands, of doses of Gerovital H3 out of Romania when she attended international conferences (administering the drug to those who requested it or giving it to doctors who wanted to test it) because the Institute of Geriatrics had its own production line where the drug was manufactured according to Professor Aslan's recipe (Boerescu, 2023).

5. SOCIAL GERONTOLOGY

Starting with 1954, Ana Aslan paid particular attention to the psychological aspects related to the prevention of the social impact of retirement. Aslan herself told Pierrette Posmovski (editor-in-chief of "Informations UNESCO") in 1974 that "retirement is a real drama." Aware of the individual and social impact of retirement, Aslan advocates for older people to remain active as long as their physical condition and desire allow (fighting against the mandatory retirement system), as the gerontologist believes that such a practice benefits both them and the society. Aslan argues that mandatory retirement has negative implications for the human psyche due to the loss of professional status, a significant reduction in income, a reduction in social contacts, and ultimately a reduction in community integration. To counteract the decline in community integration, Aslan proposes the development of social services.

Before 1957, the communist regime abolished nursing homes in Bucharest, believing that this was the right thing to do. In 1957, Dr. Ana Aslan collaborated with the Bucharest municipal authorities, supporting the reestablishment and even modernization of institutions dedicated to the elderly (especially those abandoned by their families or who had no children). Aslan's collaboration consisted of methodical support and documentation, and especially of her effective presence in these nursing homes and other institutions of this kind.

Because she was interested in the social aspects of aging (a subject of interest even today), Dr. Ana Aslan laid the foundations for "Social Gerontology" in 1958—a new research department within the Institute of Geriatrics that was tasked with addressing the problems (both medical and social) raised by the socio-political foundations of the time, which were unfavourable to the elderly population. Her studies showed that the speed of aging is influenced not only by genetic factors but also by many others: social, environmental, geographical, climatic, dietary, hygiene measures, the standard of living of the population, etc. Aslan therefore undertook actions focused on social public policies in favour of the elderly, both nationally and internationally.

Together with her colleagues, Aslan led gerontological research in three fundamental areas within the institute: clinical, experimental, and social. At the International Symposium on Gerontology and Geriatrics in Kiev (1963), the World Health Organization (WHO) recommended the model established by Aslan in Bucharest as a model that should be implemented in all international institutions in the field.

Out of a desire to help his fellow human beings, Aslan wanted to apply the prevention of aging, which was the basis of his fundamental theory, on a large scale (prevention being the method imposed by doctors and in the case of studies undertaken in social gerontology), and

thus more than 130 gerontology prevention centres were established in Romania in agricultural and industrial areas, as well as more than 70 geriatric care centres.

In 1962, with the support of the Territorial Health Directorates, the Social Gerontology Department of the Institute of Geriatrics began conducting a series of mass research studies focusing on:

- the causes of morbidity and mortality in various age groups,
- the application of methods aimed at preventing aging,
- the characterization of the geography of longevity,
- The influence of a series of factors (environmental conditions, geographical and anthropological factors) on long-lived populations in Romania.

As a result of this research, areas conducive to longevity have been identified, such as the Danube Delta and the Vrancea area; however, these areas have changed in recent decades. This type of research is increasingly relevant and necessary in the context of the rapid industrialization and changes in climate, diet, behaviour, etc.

Ana Aslan's work had a considerable impact even at the international level because it brought to the attention of the public and medical opinion the problems of the elderly, accompanied by the results obtained in the prevention and treatment of aging.

Ana Aslan wanted to combine the preventive strategies with the therapeutic and restorative ones in order to optimize the health of the elderly population and, at the same time, their social integrity in the new social, cultural, and economic conditions.

6. AWARDS, DISTINCTIONS, AND MEMBERSHIP

In recognition of her work and contribution over time, Professor Ana Aslan received a number of distinctions and was appointed member of many national and international societies, among which we mention the following:

- 1928 – founding member of the Society of Neurovegetative Physiology (Romania),
- 1944 – member of the Academy of Medicine (Romania),
- 1957 – member of the governing council of the International Association of Gerontology,
- 1959 – president of the Romanian Society of Gerontology and Geriatrics (a society she herself founded in 1959 and remained president of until her death),
- 1963 – member of the World Association of Women Doctors,
- 1965 – member of the American Society of Gerontology,
- 1968 – member of the New York Academy of Sciences (U.S.A.),
- 1974 – member of the Romanian Academy,
- 1975 – member of the International Academy of Cultural Propaganda, Rome (Italy),
- 1978 – Member of the Academy for Preventive Medicine (U.S.A.),
- Advisor to the World Health Organization (WHO) – 1963, 1965, 1976, 1977, 1978;
- 1982 – awarded the Leon Bernard Prize and Medal by the WHO for her outstanding contributions to social medicine and geriatrics.

Aslan was a member of international societies and associations and received awards from many countries, including Italy, Peru, the Netherlands, Greece, Brazil, Spain, the Philippines, Germany, Mexico, Russia, France, India, and Venezuela.

7. COMMUNISM ATTACKS ACADEMIC ANA ASLAN

The class struggle waged by the communist regime in Romania resulted in the eviction from their homes of a considerable number of intellectuals and influential figures from the old political regimes. Being a kind-hearted person and unable to leave them on the street, Aslan took several such elderly people into the nursing home where she was conducting her research. For these actions, in 1978, academic Ana Aslan was investigated by the political regime (on the orders of Elena Ceauşescu) and charged 1.5 million lei, which represented the expenses incurred by the state due to the fact that, starting in 1952, Aslan, as director, had not stopped

their pension payments for the elderly people's stay in the home, food, and other such expenses. Aslan saw the injustice and fought a seven-year legal battle with the Romanian state, being acquitted just a few months before her death, managing to win in court thanks to evidence that the elderly people in question had been involved in various research projects undertaken by Aslan and other researchers at the Institute of Geriatrics and Gerontology (for Gerovital H3, Aslavital, and others, thus contributing to science and the economy).

Aslan suffered from high blood pressure and ischemic heart disease throughout her life. In the latter part of her life, she suffered from an autoimmune disorder (pemphigus) affecting her mouth and pharynx. Although she consulted numerous specialists around the world for this problem, the symptoms became more and more pronounced and the Romanian doctor ended up having difficulty in eating, her voice became unrecognizable, and she lost a lot of weight. However, none of these diseases brought about Professor Aslan's demise, but rather colon cancer (associated with an infection), for which she underwent surgery at the insistence of Professor Setlacek (surgeon). Following the operation, she contracted a microbe in the hospital (Pioceanic) and became infected, requiring further surgery. However, the infection spread throughout her abdomen, she developed a fever throughout her body, and she eventually died on May 20, 1988, at Elias Hospital in Bucharest.

Even now, once again, Elena Ceauşescu wanted to humiliate her (for the last time) and ordered the funeral ceremony to be conducted differently from Ana Aslan's wishes. Therefore, the body of Academician Aslan was not laid to rest in the Kalindero-Danielopolu tomb (where her mother and brothers were buried), but separately, also in Bellu Cemetery; and the funeral ceremony did not take place in the presence of priests. Ana Aslan's body was brought directly from Elias Hospital to the cemetery, where it was buried about half an hour following its arrival. The ceremony was attended by several members of the Communist Party dressed in colourful clothes as a sign of disrespect; and later, in the absence of information regarding the funeral provided to the public, representatives of embassies and ordinary people came to pay their last respects. Knowing that Aslan was a religious person, overnight a wooden cross with the deceased's name was placed on her grave by an unknown person.

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