

Professor Ante Vukas (1910-1991) – Always Ahead of His Time

Zdravko Periš

Corresponding author:

Professor Zdravko Periš, MD, PhD
Sl. Krautzeka 92b
HR-51000 Rijeka
Croatia

SUMMARY The biography of Professor Ante Vukas, MD, PhD, is accompanied by due account of his professional and organizing competences, at first as head of the Department of Dermatology and Venereology, Sušak Hospital, later head of the University Department at the same hospital, introducing the latest methods in the diagnosis and therapy of skin and venereal diseases (epidermotectoscopy, corrective dermatology, immunotherapy, electron microscopy, immunohistology, PUVA therapy, etc.). Although all these methods were introduced at the institution headed by Professor Vukas first in the former state, and some of them even first in Europe, he had never received any formal recognition of his professional and scientific work from either his University Hospital, or School of Medicine where he was also employed, or the city where he worked for more than 40 years. Professor Vukas was a proud man, standing these insults with dignity, steadily keeping his feelings about them as well as his own achievements to himself.

KEY WORDS: innovation, achievement, recognition

INTRODUCTION

Ninety-five years have passed since the birth and 15 years since the death of Professor Ante Vukas, MD, PhD, long-standing head of the Department, later University Department of Dermatology and Venereology, Sušak Hospital in Rijeka. This article has been induced by a sort of questionnaire the author performed among physicians, members of the Croatian Medical Association (CMA) branch in Rijeka, including those having worked at the same hospital in Sušak. The physicians were asked to say what they knew about Professor Ante Vukas. To my great surprise, they all knew where he worked and what his position was, however, with the exception of a few senior physicians, mostly dermatologists-venereologists,

they knew almost nothing about Professor Vukas' contribution to the development of dermatology and venereology in Croatia. Considering the saying that *verba volant, scripta manent*, I have decided to write this paper for the sake of history and for our junior colleagues to see how it was possible to keep the profession at an enviable level even with meager means while investing great efforts, perseverance, talent and self-denying work. It was in part his fault why so little was known about him. He was a man of high principles to which he stood firmly throughout his life. According to one of these principles, it was inappropriate for a physician in ethical and deontological terms to write about his work in non-professional journals, as it could be

considered as a form of personal promotion. Like anybody else, Professor Vukas had both good and some less good traits, however, the rule of *de mortuis nihil nisi bene...* should always be respected. Yet, he was blessed with some virtues that, unfortunately, are present to an ever lesser extent in today's physicians. Irrespective of his personal relations, he never spoke evil of his colleagues and always treated with due respect a general practitioner and university professor alike.

BIOGRAPHY

Ante Vukas was born on February 20, 1910 in Split, to father Stjepan and mother Marija née Taušić. He completed elementary school and high school in Split, to continue with his medical education in Graz and Zagreb, where he graduated from School of Medicine in 1934. In 1937, he served his internship and volunteered, to work in Slavon-ska Požega for some time. In 1936, he married Kitica Stipanović from a distinguished Split family, the couple being blessed with three sons. In 1937, he applied for the announced position at the new District Hospital in Sušak, with Head Doctor Niko Bonetić, the then head of the Department of Dermatology and Venereology and at the same time head of the Dispensary for Skin and Venereal Diseases. At that post-war time, upon the retreat of the Italian army in 1923, venereal diseases posed a major problem. Head Doctor Niko Bonetić, a renowned dermatologist-venereologist, came from Vienna to Sušak upon invitation by the mayor of Sušak, to take over the Clinic of Skin and Venereal Diseases, that were in the very focus of his scientific interest (1,2). Having recognized young Dr. Vukas as a promising, diligent, persevering, ambitious and well-educated colleague, he readily accepted him and started working with him. They had published a number of individual or joint papers in domestic and international professional journals already before the World War II began (1,3-6). In 1940, Dr. Vukas passed his specialist exam in Zagreb. Head Doctor Bonetić died soon thereafter, and Dr. Vukas was appointed head of the Department of Dermatology and Venereology at Sušak Hospital by a decision issued by the Autonomous Banovina of Croatia authorities. In 1941, at the beginning of World War II, Sušak Hospital was transformed into a Military Hospital by the occupying forces, while Dr. Vukas was transferred to Department of Dermatology and Venereology at Rijeka Hospital. Upon the fall of Italy in 1943, as a democrat and patriot, he joined the partisan movement, together with other physicians from the Sušak

Hospital, and assumed responsible positions in Medical Corps in Lika, Vis, Lovran and Bari. To his great disappointment, he was not demobilized after the end of the war but had to wait for it until 1947. When he returned to the Sušak Hospital, he found his Department demolished and destroyed, closed for five years, requiring complete reconstruction. Having invested huge efforts and persistence, he managed to do it to the benefit of the local population. The Department had 30 beds, along with Dr. Vukas there were two nuns-nurses, two cleaners, and no laboratory at all, therefore using the Public Health Institute laboratory as needed. Persevering and conscientious as he was, Dr. Vukas acquired high reputation and confidence both among his colleagues and the community in general. Besides his family, the Department, later University Department became his great love and meaning of his life. Characterized by the will and sense for scientific research, he was dealing with experimental research in addition to clinical practice. His work reached beyond the scope of dermatology and venereology, entering the fields of genetics, immunohistology, allergology, etc. His professional work and scientific research should best be followed in a strictly chronological order.

In 1945, while still in army service, Dr. Vukas published his paper on penicillin therapy for gonorrhea, where one hundred units of penicillin resulted in cure (2). It was the first article on the issue, and Dr. Vukas was able to write about it because at the time penicillin therapy was exclusively available at military institutions. Later on, the dose of penicillin had to be continuously increased since the sensitivity of gonococcal strains was on a constant decline until 1962, when absolute resistance of some gonococci was demonstrated at the Sušak Department of Dermatology, which was of utmost importance to prevent the spread of the disease (7).

In 1949, together with the Hospital pathologist, Dr. Vukas founded the first laboratory of histopathology, having previously invested much effort to provide a microscope and a microtome for preparation cutting, which was quite a difficult task at the time.

In 1950, he introduced his own method of epidermotectoscopy in the diagnosis of cutaneous diseases, based on the altered architecture of the superficial skin layers, and he wrote about it in domestic and international journals. The presentation of the topic of epidermotectoscopy at dermatology congress in London in 1952 proved great success (8-13). Unfortunately, he could not

do it himself, so someone else read his lecture. Such a situation may nowadays seem incredible; however, it was by no means easy to get a passport, a visa and the money needed for such a trip, as the sponsorship was an unknown category at the time. In the same year, he was presented the Scientific Exhibit of American Medical Association award for this discovery. In 1953, as a renowned dermatologist-venereologist, Dr. Vukas received a World Health Organization (WHO) scholarship for training in The Netherlands. He also visited other centers in Western countries and was properly introduced in the general progress of medicine, including dermatology and venereology. As clinical morphology of skin diseases had been completely clarified by the time, he recognized the high relevance of specific dermatology-venereology laboratories and introduction of subspecialties that had already been established in dermatology-venereology as well. Immediately upon return to his department, he founded laboratory of serology with reactions for the diagnosis of syphilis. In addition, he was the first in the then state to introduce VDRL test, still used in most laboratories (14). Thus, the Hospital acquired independence from the Public Health Institute, where these tests had previously been performed. At the same time, Dr. Vukas introduced compulsory testing for syphilis for all hospitalized patients irrespective of the ward. In this way, a large proportion of patients unaware of having syphilis were identified. In the same year, Dr. Vukas referred a junior fellow physician for training in Kiel, to master the methods of epicutaneous testing, modernized laboratory of allergology, and introduced some new allergens.

In 1954, Dr. Vukas was awarded the title of Head Doctor by decision issued by the Public Health Secretariat of the Republic of Croatia. In 1955, prior to the foundation of the School of Medicine in Rijeka, he habilitated at School of Medicine in Zagreb, to become the first Assistant Professor in the field of dermatology-venereology in Rijeka. In the same year, in order to relieve the burden of the Zagreb School of Medicine, School of Medicine was founded in Rijeka, so eagerly advocated by Dr. Vukas. Professor Silvije Novak, the first dean of the newly established School of Medicine in Rijeka, bestowed the management of exercises and exams in dermatology-venereology to Assist. Professor Vukas. In the next year, however, he was appointed lecturer at College of Dental Medicine, later growing into Department of Dental Medicine, Rijeka School of Medicine, where Assist. Professor held lectures until his retirement in 1979.

In 1956, after his nine-year work as the only physician at Department, he finally got an assistant, whom he charged with the laboratory of serology. Upon due training abroad, in 1958 his female assistant introduced a very complex and by then most specific serotesting for syphilis, i.e. *Treponema pallidum* immobilization or Nelson-Mayer test, to verify or definitively rule out syphilis infection in many patients with false reactive test, many of them for years treated as suffering from syphilis (15,16). Before Sušak Hospital, the test was introduced at the respective University Department in Zagreb, so Croatia as a small country had two such laboratories at the time when there were only few in Europe, whereas in the USA these laboratories were only established in every other state. The high importance of these laboratories is best illustrated by the fact that a WHO reference center was founded in Geneva, to which reports were submitted and from which instructions were received. At that time, laboratories of venereology were classified according to their performing or not performing TPI test.

In 1958, Assist. Professor Vukas introduced, as the first in this part of Europe, Kurtin's method of dermabrasion at his Department. He used the method in patients with congenital or acquired defects, especially those visible on the face (17-23). At that time, it was useless to ask for financial support for instruments from the Hospital management because health care system was in a very difficult financial situation. In collaboration with the Hospital Technical Service, Assist. Professor Vukas adapted a dental instrument, increasing the rate of rotation, which could be somehow used to perform dermabrasion, however, only when supplied with Kurtin's steel brushes by the courtesy of our seamen that traveled to the USA. Then, it was the only department in former state and this part of Europe where this operative procedure was performed, and hundreds of patients were coming for years from all over the state and abroad for various corrections. No wonder, because may we admit it or not, one's appearance is highly relevant for both mental stability, satisfaction and self-confidence, and according to own estimate, for life achievements (24,25).

It had long been known that sunrays had a favorable effect on psoriasis vulgaris in the majority of these patients, although modern scientific research was not available at the time. This research started only in 1959, with the works by Israeli scientists on heliomarine therapy at the Dead Sea (26). As early as 1958, Assist. Profes-

Professor Vukas referred his psoriasis vulgaris patients to swim and sunbathe, thus reducing their hospital stay by one third. In the morning they were swimming and sunbathing, and in the afternoon they received their usual local therapy. Someone reported Assist. Professor Vukas for this practice, which may now seem ridiculous, however, it was just after private practice abrogation. Soon thereafter, the then State Security Police came to see who those people were that were swimming and sunbathing while using complete hospital accommodation. The commission found there was no abuse of hospital beds, yet recommending them to spend some more time in patient rooms to prevent the population be disturbed by malevolent murmurs. Fortunately, in 1964, the Zagreb University Department of Dermatology and Venereology opened a resort for psoriatics in Veli Lošinj.

Towards the end of the 1950s, excellent antiallergic and anti-inflammatory corticosteroid agents became also available for local application. At the same time, however, WHO issued a recommendation that tar agents, until then most widely used and efficacious agents for psoriasis, be avoided in the management of psoriasis, due to the allegedly 18 recorded cases of skin carcinoma that may have possibly been related to previous use of tars. These numbers referred to the world as a whole with about one hundred million psoriasis patients. As the recommendation came from the renowned organization of high reputation, it had a shocking effect and most departments and university departments discontinued using tars in the treatment of skin diseases. This recommendation contained a disguised promotion of corticosteroids for local application, which were by far more expensive than tar agents were, i.e. it was for the profit of pharmaceutical industry. As it was a recommendation, not a ban, Assist. Professor Vukas did not give the use of tar for this purpose up, and asked the hospital pharmacy to continue preparing tar agents for local application, alone or in combination with corticosteroids or salicylic acid. He was right, as confirmed several years later by Pliva Inc., adding tar to the corticosteroid Locacorten. At that time, the Sušak Department of Dermatology and Venereology was the first in the then state to abandon classic anti-syphilitic therapy (arsenic, bismuth, iodine), to use only penicillin agents in the treatment of syphilis.

During the 1960-1962 period, upon respective training abroad, all the then known methods of allergologic testing were introduced in order to improve the allergologic laboratory performance.

Immunotherapy (hyposensitization) was introduced at allergologic clinic, at first for dermatology patients, then for patients referred from all other fields of medicine (ENT, pediatrics, internal medicine, pulmonology, etc.). In these endeavors, the Sušak dermatology also took the leading role in the state, while immunotherapy was not available at any other department in Rijeka. As it was a novel subspecialty, the flow of patients from all fields of medicine was daily increasing. At that time, Department met all preconditions to grow into a University Department, and Assist. Professor Vukas to be appointed part-time Associate Professor of Dermatology and Venereology, which he experienced as another stimulus for his devoted professional and scientific activities.

In 1964, a long-term study and project on the genetic aspect of diseases with special reference to psoriasis was launched in collaboration with Department of Physiology, School of Medicine in Rijeka. In 1967-1968, University Department of Dermatology and Venereology in collaboration with University Department of Medicine was the first in the then state to employ podophyllin and methotrexate derivatives for severe forms of psoriasis, which provoked malevolent response from some dermatologists, under the pretext of severe side effects of this cytostatics (27,28). Nowadays, the use of methotrexate in the management of psoriasis is described in all respective textbooks worldwide.

In 1969, after Orentreich had demonstrated the hair transplanted from the occipital region to retain all the original site properties, Professor Vukas was the first in this part of Europe to introduce hair transplantation as a corrective method. The more so, he added some modifications in the graft size and form, healing, and avoiding the formation of scars at the site of transplantation (29). Years later, plastic surgeons accepted the method for the same purpose.

In 1971, FTA test in syphilis serology was introduced at the University Department. In 1972, Professor Vukas was the first to introduce the use of electron microscopy in dermatology, in collaboration with Department of Histology, School of Medicine, in his study on regenerative processes in tissue affected by chronic pathology, including psoriasis (30-35). In the same year, a study on ultrastructural and cytochemical photodynamic reactions to psoriasis was conducted at University Department of Dermatology and Venereology, and Department of Histology (35).

In 1973, the great epidemic of smallpox broke out in Kosovo. Among patients that presented for dermabrasion to treat the scars left after the disease, the results achieved were by far better if the procedure was performed upon the inflammatory processes of the skin had subsided (22).

Following the sensational discovery by Parish and coworkers from 1974 in the treatment of psoriasis with PUVA therapy, and knowing that no resources could be expected from the Hospital to purchase the instrument, the University Department of Dermatology and Venereology turned to a sponsor filling a high post at a reputable governmental company, whom nobody from the Workers' Council dared to oppose. Several weeks later, the instrument was mounted at the Department (35-38). We had even been unaware of the fact that our Department was the first in the state, until privileged patients with psoriasis from all republics of the former Yugoslavia started coming for treatment. Only a decade later, it was found that Sušak University Department along with Vienna University Department of Dermatology and Venereology was the first in Europe to use PUVA therapy in the treatment of psoriasis.

Knowing that University Department of Dermatology and Venereology in Sušak had been engaged in the study of psoriasis and its therapy, the Public Health Secretariat referred naphthalene specimens to the Department to test the effect in patients with psoriasis and neurodermatitis (atopic dermatitis). Naphthalene was found to exert favorable effects in these patients.

In 1975, Sušak University Department underwent restructuring and dividing into departments of general dermatology, allergology and corrective dermatology, as the first in the then state. In the same year, RAST and RIST were introduced in allergology, in collaboration with Central Laboratory. In addition, the first laboratory of immunofluorescence testing for all fields of medicine was established at our Department in 1975, as the only one of the type in Rijeka down to the present (38,39).

In 1977, an expert team consisting of a dermatologist-venereologist, urologist, endocrinologist and gynecologist was established in collaboration with Central Laboratory to upgrade the research into the issue of male infertility, as only spermiogram had by then been available.

In 1979, Professor Ante Vukas was retired as part-time associate professor.

COMMENTARY

After World War II, the Department, then University Department was in a very difficult situation in terms of premises, finances and personnel structure. People had to cope with poverty and shortage in their daily living, having resigned to it also in health care. They all had health insurance and had to stand the shortage of drugs and instruments. The lack of antibiotics posed a major problem, and many died due to it. However, something that was not lacking should be mentioned here, i.e. regular and excellent information via professional journals provided for Department by the Hospital, School of Medicine, or sponsors. Those interested in up-to-date information had an opportunity to learn all novelties in the field of dermatology and venereology all over the world.

However, our specialty had to select those subspecialties that were interesting and useful to other fields as well, such as serology, allergology, immunofluorescence diagnosis, etc., in order to get due resources and consents. As there were only three physicians specialists including head of department at Sušak University Department of Dermatology and Venereology, it was not possible to introduce new subspecialties that grew ever more numerous with time. Fortunately, there was another University Department of Dermatology and Venereology in Rijeka, which introduced those subspecialties that were not represented in Sušak, e.g., mycology, dermatoscopy, ultrasonography in dermatology, phlebology, etc. When the two departments were unified into the University Department of Dermatology and Venereology, Rijeka University Hospital Center, their joint repertoire of diagnostic and therapeutic methods compared favorably to any European department, while working in by far better conditions and providing treatment for AIDS, which we could not do due to inappropriate conditions. Credit for successful performance of Sušak Department of Dermatology and Venereology, introduction of new methods and subspecialties goes to the entire personnel of our University Department, including nurses, laboratory technicians, residents, and above all specialists for introducing novel methods, working faithfully, thoroughly, with dedication and enthusiasm, stimulated by being aware they would be the first in the former state in case of success. Results of this hard work, led by Professor Vukas, can be seen in the articles published in domestic and international periodicals, not only then but also after his retirement, when his successors have continued and even extended some activities. Yet, it

should be admitted that most credit for all these achievements goes to Professor Ante Vukas who laid the foundations of modern dermatology and venereology at Sušak Hospital, including both clinical practice and experimental research.

In conclusion, one should ask what recognitions had Professor Ante Vukas received for his work throughout these years. The answer that may be perceived as impossible is – NONE; neither from the University Hospital Center, from the School of Medicine, in the foundation of which he had invested so much effort, from the City of Rijeka, nor from the Croatian Medical Chamber. He was not awarded a single medallion, a letter of thanks, a scroll of honor, a diploma, or award by the City of Rijeka he stayed loyal to in face of attractive offers for leading positions from other centers. Although a Dalmatian, he loved this town and stayed loyal to it for life. As for recognition, he was a proud man, standing this injustice with dignity, never talking about it, just as he never used to talk about his scientific achievements.

Those less familiar with the profession may say that the endeavors made at Professor Vukas' Department are not as attractive as, for example, some life-saving operative procedure. To say the truth, dermatology-venereology has never been a highly attractive specialty, and there are no famous discoveries related to it. Yet, I take the liberty of rephrasing the first American astronaut Armstrong, who said while walking on the Moon: "This is a small step for man but a huge step for mankind". What Professor Vukas had done, may not seem much to a healthy individual, but is a great success for a patient heavily debilitated by his disease who has achieved cure or his difficulties have been alleviated. Quite a long time ago, Arthur Schopenhauer, a German philosopher, said: "Without health, we cannot enjoy any joie de vivre".

REFERENCES

1. Vukas A, Bonetić N. Rezultati liječenja gonoreje domaćim sulfonamidskim preparatima. *Lijec Vjesn* 1941;64:10.
2. Bonetić N. O endemskom sifilisu u Hrvatskom Primorju (Morbus Skerljevo). V. Kongres Jugoslavenskog dermatološkog društva, Zagreb, September 6, 1933.
3. Vukas A. Slučajevi lepree na otoku Krku. *Lijec Vjesn* 1939;3:18.
4. Vukas A. Osteomyelitis sifilitica. *G Ital Dermatol* 1940;6:31.
5. Vukas A. Zur Frage der multiplen Luesinfektionen. *Wien Med Wochenschr* 1941;4:1.
6. Vukas A. Liječenje gonoreje penicilinom. *Kongres Med JNA, Beograd*, 1945.
7. Vukas A, Periš Z. Rezistencija gonokoka na antibiotike. *Med Glasn* 1962;343.
8. Vukas A. Epidermotektoskopie bei Keratoma punctatum palmo-plantare. *Acta Med lug* 1950;1/2:4.
9. Vukas A. Zur der Epidermodysplasia verruciformis. *Dermatologica* 1950;101:37-41.
10. Vukas A. Neke dermatoze prikazane metodom epidermotektoskopije. *Lijec Vjesn* 1951;73:113-7
11. Vukas A. Application of tangential cutis of skin efflorescences method important in differential diagnosis and in the examination in skin diseases (epidermotectoscopy). *Acta Med lug* 1950.
12. Vukas A. Zur Analyse der Hautstruktur mit Hilfe des Epidermotektogrammes. *Dermatologica* 1952;105:41-4
13. Vukas A. Erythroderma ichthyosiforme congenitum. Epidermotectoscopical description of a case. *AMA Arch Derm Syph* 1951;64:36-40.
14. Vukas A. Naša iskustva sa VDRL seroreakcijom na lues. *Higijena* 1956.
15. Vukas A, Černe E, Nonveiller T. Seroreakcije treponemskim antigenima. *Higijena* 1961;4.
16. Vukas A, Černe E, Nonveiller T. Značenje Nelson-Mayerova testa kod cerebrospinalnih likvora. *Zdrav Novine* 1959;12:17.
17. Vukas A. Brušenje kože u dermatologiji. *Lijec Vjesn* 1960.
18. Vukas A. Liječenje ožiljaka lica. *Med Glasn* 1960;349.
19. Vukas A. Liječenje vulgarnih akna dermoabrazijom. *Srp Arh* 1961.
20. Vukas A. Adenoma sebaceum Pringl. Liječenje dermoabrazijom. *Pediatr lug* 1965.
21. Vukas A. Dermabrasion followed by topical corticosterids in skin diseases. *Dermatologica* 1968;137:107.
22. Vukas A. Smallpox induced scars. Treatment by dermabrasion. *Dermatologica* 1974;148:175.
23. Vukas A. Značenje dermoabrazije u korektivnoj dermatologiji. *Acta Derm lug* 1976;3:245.
24. Vukas A. Embryogenetic aspects in dermatology. *Dermatologica* 1965;131:293.

25. Vukas A. Embriogenetske refleksije na psoriasis vulgaris. V. Kongres dermatovenerologa Jugoslavije, Zagreb, 1965.
26. Dostrovsky A, Sagher F. The therapeutic effect of the Dead Sea on some skin diseases. *Harefuah* 1959;57:143-5.
27. Vukas A, Kopajtić B. Liječenje psorijaze derivatima podofilina. *Med Glasn* 1967;280.
28. Vukas A, Kopajtić B. Liječenje psorijaze metotreksatom. *Lijec Vjesn* 1968.
29. Vukas A. Liječenje ćelavosti transplantacijom kože. *Lijec Vjesn* 1970;92:75-91.
30. Vukas A, Vlahović Š, Eberhardt P, Vlahović V. Hyalinosi cutis et mucosae. Regenerative properties of tissues in chronic pathology. *Dermatologica* 1972;144:168.
31. Vukas A. Ultrastrukturalna studija regeneriranih vezivnih elemenata u senilnoj elastozi. *Acta Derm lug* 1974;20:23.
32. Vukas A, Zambal Z. Regenerative properties of tissues involved in chronic pathological processes. *Gerontologia* 1974;20:9.
33. Vukas A, Velfl D, Gligora M. Ultrastrukturalna studija hyalinosi cutis et mucosae. *Acta Derm lug* 1974.
34. Vukas A, Gligora M, Velfl D. Tonofilament-desmosome complex in induced regenerated epidermis in senile elastosis. An electron microscopic study. *Dermatologica* 1976;152:142.
35. Vukas A, Velfl D, Gligora M. Ultrastructural features of psoralen plus black light induced successive changes of psoriatic cells. *Dermatologica* 1977;277.
36. Vukas A. Liječenje psorijaze 8-metoksipso-ralenom i tamnoplavim svjetlom. *Lijec Vjesn* 1976;98:160-2.
37. Vukas A. Photochemotherapy in treatment of psoriatic variants. *Dermatologica* 1977;355.
38. Vukas A. Liječenje psorijatičnih atipija fotokemoterapijom. *Acta Derm lug* 1977;89.
39. Gligora M. Značenje imunofluorescentnih pretraga u dijagnostici eritematodesa. *Lijec Vjesn* 1977;2:127.
40. Gligora M. Epithelium of the human palatal tonsil used for test antigen in IIF examination (for pemphigus, pemphigoid antibodies and ANA). *Dermatologica* 1977;155:108.
41. Gligora M. Lichen planus mucosae oris et erythematodes chronicus discoides faciei et capilliti u jedne bolesnice u svjetlu imunološke pretrage. *Acta Derm lug* 1977;4:147.
42. Gligora M. Dermatitis herpetiformis Duhring-Brocq: dijagnostička vrijednost imunofluorescentnih pretraga. *Acta Derm lug* 1978;5:231.
43. Gligora M. Metoda imunofluorescentnog bojenja u imunodermatologiji. *Med Jadertina* 1978;1:263.
44. Gligora M. In vivo fiksirani imunoglobulini u koži oboljelih od papuloskvamozne dermatoze. Lichen ruber planus. *Medicina* 1977;14:33.
45. Gligora M, Dobrić I. Pseudoporphyria cutanea tarda kod anuričnog bolesnika na dijalizi. *Proceedings, Kongres za dijalizu i transplantaciju, Opatija*, 1978;225.
46. Periš Z. Preosjetljivost na penicilin u dječjoj dobi. *Arhiv za zaštitu majke i djeteta* 1966;4:189.
47. Periš Z. Dermatitis allergica contacta medicamentosa. *Lijec Vjesn* 1968;90:15.
48. Periš Z. Rezultati intrakutanog testiranja kod bronhijalne astme, alergijskog rinitisa i neurodermitisa. *Zdravst Vestn* 1969;43 (Suppl II).
49. Periš Z, Rede T. Komparacija testa bazofilne granulacije po Shelleyu i intrakutanih testova kod preosjetljivosti na penicilin. *Proceedings, III. Kongres alergologa Jugoslavije, Sarajevo*, 1969;562-6.
50. Periš Z. Alergološki testovi nutritivnim alergenima u bolesnika sa kroničnom recidivirajućom urtikarijom. *Proceedings, IV. Kongres alergologa Jugoslavije, Ljubljana*, 1972;484-6.
51. Periš Z, Beleznyay O. Pseudoalergijske reakcije na prokain penicilin i lokalne anestetike. *Acta Derm lug* 1974;1:73.
52. Periš Z. Detekcija alergijskih i pseudoalergijskih reakcija na prokain penicilin i lokalne anestetike. *Acta Derm lug* 1974;1:136.
53. Periš Z. Medikamentoza alergija u dermatologiji. *Habilitation thesis, Ljubljana*, 1974.
54. Periš Z, Čohar F. Kožne promjene u bolesnika s transplantiranim bubrezima u tijeku imunosupresivne terapije. *Acta Derm lug* 1975;2:145.
55. Periš Z, Gligora M. Dijagnostičke mogućnosti indirektno imunofluorescence u nekih autoimunih bolesti s oralnim promjenama. *Acta Stomatol Croat* 1976;11:78.
56. Periš Z, Žuža B. Pseudoalergijske reakcije na lokalne anestetike kod dermoabrazije i lokalnih operativnih zahvata u usnoj šupljini. *Proceedings, Jugoslavenski medicinski dani, Budva*, 1976.
57. Periš Z, Žuža B. Alergijske reakcije na akrilate

- sluznice usne šupljine. Acta Stomatol Croat 1978;12:24.
58. Periš Z, Smokvina D. Dokazivanje imunoglobulina E RASTom i intrakutanim testovima u bolesnika iz grupe atopija. Medicina 1978;4:12.
59. Periš Z, Mošić J. Da li RAST može zamijeniti intrakutane testove? Proceedings, Naučni sastanak alergologa i kliničkih imunologa, Ohrid, 1979.
60. Periš Z. Spremembe na koži bolnikov z dolgotrajno imunosupresivno terapijo. Zdrav Vestn 1978;47:431.
61. Periš Z. Supresija imunološkog odgovora i hiposenzibilizacija. Acta Derm Iug 1979;9:193.
- Note: The articles by Professor A. Vukas and co-workers cited in the paper are exclusively related to the paper contents and to the period until 1979, i.e. Professor A. Vukas retirement.



By homework - Nivea cream; year 1936.
(from the collection of Mr. Zlatko Puntijar)