DEVELOPMENT OF NEPHROLOGY

Professor Rastislav Dzúrik: the Man and the Scientist

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Abstract

Rastislav Dzúrik, finished his medical study at the Medical School of Comenius University in Bratislava in 1953. After graduation he began to work at the Institute of chemistry and biochemistry of the Medical School and in 1957 he continued working at the IIIrd Internal Clinic of this faculty, which became later the base of "Internal School of Professor T. R. Niederland" with biochemical focusing. In the year 1967 Professor Dzúrik in cooperation with Professor Jan Brod founded the Nephrological Section of the Slovak Internal Society and then the postgraduate scientific-research activity in nephrology began. The main topics of his scientific activity, in which he received many priority results, were:

1. Isolation and characteristic of inhibitor of glucose utilisation and of inhibitor of renal gluconeogenesis;
2. Effect of "middle molecular substances", especially in the development of renal insufficiency;
3. Isolation and identification of hippurate and pseudouridine.

His publishing activity was manifested in more than 500 scientific papers, several monographs and many chapters in various textbooks and manuals of internal medicine and clinical biochemistry, and more than 1,000 citations. The most important success of Professor Dzúrik was the textbook "Nephrology" which was published in 2004 and he was its main editor. Rastislav Dzúrik's impact on the field of Nephrology in Slovakia was manifold. It included his complex work of clinical nephrology, his pedagogical activities, and last but not least his excellent organizing abilities.

Key words: clinical nephrologist, pharmacologist and biochemist, Rastislav Dzúrik, scientist and organizer

Professor Rastislav Dzúrik MD, DSc. died after a long illness on February 27, 2014 (Figure 1). He was one of the most outstanding Slovak medical personalities who lived in the 20th and at the beginning of the 21st century. He left work that significantly influenced the development of general internal medicine, clinical nephrology, biochemistry and pharmacotherapy.

Professor Dzúrik was born on August 24, 1929 in Košice. He graduated from the High School in Bratislava in 1948.He finished his medical study at the Medical School of Comenius University in Bratislava in 1953. After graduation he began to work at the Institute of chemistry and biochemistry of the Medical School. As a young assistant he was immediately involved into pedagogical work and at the same time he tried to find a contact with clinical practice. In 1957 he went together with some assistants (Eva Brixová, MD, Jan Gvozdjak, MD) to the newly founded 3rd Internal Clinic and continued in working. Later the Clinic became the base of "Internal School of Professor T. R. Niederland" with biochemical focusing [1]. He participated together with other assistants in the establishing of Research Laboratory of Pharmacobiochemistry at that Clinic, which became its experimental base. In these years started the developing of new clinical divisions. Clinical biochemistry had a prominent place among them. Dzúrik tried to support therapeutic activity by high-quality diagnostics. Until 1962, he received attestation of clinical biochemistry and of internal medicine of the 1st and 2nd degree. At the same time he defended his PhD thesis with a title "Contribution to the effect of the salyrgan in the kidneys". Despite the time-

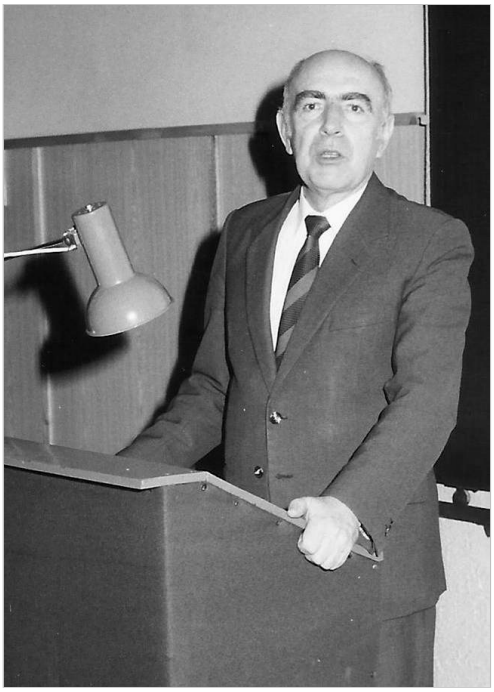

Figure 1.
Professor Rastislav Dzúrik MD, DSc.

challenging work at the Clinic as well as in the laboratory, he received the academic degree Associate Professor of internal medicine at the Medical School of Comenius University in 1965. His habilitation thesis "Experimental contribution to the metabolism of the glycides in the kidneys" clearly indicated his future scientific focus. This was also demonstrated in his dissertation thesis "Uraemia – pathophysiology of carbohydrate metabolism", published in English in 1973 and he defended his academic title "Doctor of Medical Sciences (DSc)". In 1987 he was appointed as a full professor of internal medicine.

Work in laboratory showed to the need for education of qualified laboratory technicians. Therefore, in 1961 he took care of the education of biochemical laboratory technicians, as the founder and head of the Department of medical laboratory technicians at the Institute for further education of medical staff. As a study aid he prepared a monograph "Enzymology" in 1967 [2], which became a valuable study material for them, and also for doctors of medicine who have completed courses at the Department of Clinical Biochemistry, at the Institute for further education of physicians and pharmacists, where he also lectured. In 1980 he became the Head of that department and in 1983 the Director of the Research Institute of Medical Bionics. The Institute under his leadership soon gained an international authority. Here, in the new environment with the need of rapid handling of computer technology problems and its applications, fully excelled his extraordinary inventions and realizing abilities. In the framework of the Research Institute of Medical Bionics he has created the conditions for the foundation of a Centre of Clinical Pharmacology. The Centre - the only one of this kind in the former Czechoslovakia, provided valuable assistance to the domestic pharmaceutical industry in monitoring the effect of new drugs. Nowadays the core of this centre forms a substantial part of the Institute of Preventive and Clinical Medicine in Bratislava.

He wrote several monographs i.e. "Diuretic Therapy" [3]; "Kidney metabolism and function" [4]; "Disorders of the Internal Environment - Diagnostics and Therapy" [5] and other; and chapters in textbooks of Professors Dérer and Dieška "Internal Diseases"; of Professor Hořejší "Principles of Biochemistry in Internal Medicine". He published together with Prof. Niederland "Clinical Aspects of Trials of New Drugs". Professors Dzúrik and Trnovec were the main editors of two books "Standard Diagnostic Procedures" [6] and "Standard Therapeutic Procedurs" [7] in 1998 and 2001.The most significant success of Professor Dzúrik was the important textbook "Nephrology" which was published in 2004 [8] and he was its main editor. It is a complex work of clinical nephrology which completed his and co-authors clinical, pedagogical, scientific and research activities, but always in the context of internal medicine. His publishing activity was manifested in more than 500 scientific papers, most of them in international journals and more than 1,000 citations.

In addition to his scientific and research activities it is also necessary to underline his excellent organizing abilities and activities. He founded the Nephrological Section of the Slovak Internal Society in cooperation with Professor Jan Brod in 1967. This allowed to start the postgraduate scientific and research activity in nephrology. He was the first President of this Section. Later he became the President of the Slovak resp. Czechoslovak Nephrological Society, in which he alternated with Professor Albert Válek, especially in the organization of international nephrological congresses. He started cooperation with important foreign nephrologists, i.e. Professors Carmelo Giordano, Jonas Bergström, August Heidland, and others. He invited them to present their scientific papers at congresses in Bratislava, i.e. at the 8th Danube Symposium on Nephrology in 1987. Since then under the leadership of Professor Dzúrik and later under the leadership of his student Professor Viera Spustová, MD, DSc. [9], nephrology has developed still at a higher level. In the second half of the 20th century clinical nephrology recorded an unprecedential development that resulted in the formation of new clinical division "nephrology" within internal medicine. Curative and preventive care of patients with kidney diseases, pre-and postgraduate education of medical students and doctors of medicine in nephrology, as well as scientific and research activity continued and have been further developed at the beginning of the 21st century.

In this context it should be noted that to manage the above mentioned activities within the Medical School and later the Slovak Medical University, such a universal personality as Professor Dzúrik was needed. He had an extraordinary theoretical, practical, clinical and biochemical erudition. We have to say that it was very difficult to separate his activities in the terms of general internal medicine, nephrology, clinical biochemistry and clinical pharmacology because they overlapped each other. Tremendous activity of Professor Dzúrik as an excellent organizer of numerous national and international congresses and symposiums resulted in fact that he became the President of the Slovak Medical Association. At the congresses he had with his coworkers still active participation, often as an invited speaker. He presented lectures in concise form in different languages and these were published in foreign journals or proceedings.

The main topics of his scientific work, in which he received many priority results, were: Isolation and characteristic of inhibitor of glucose utilisation and of inhibitor of renal gluconeogenesis [10] [11]; Isolation and identification of hippurate and pseudouridine [11] [12]; Effect of "middle molecular substances" [13] [14], especially in the development of renal insufficiency. He developed a concept of "middle molecular substances" in the pathogenesis of renal insufficiency, which had a great response abroad. All of these works contributed to the clarification of the "uremic toxicity" and of the progression of kidney diseases. In the terms of our cooperation we consider

as extremely important work on "middle molecular substances" - uremic toxins, which have significant participation in the development of uremic syndrome in acute and chronic renal failure [15] [16].

The scientific and research work that Professor Dzúrik has performed during his active life will remain as a stimulus for the next generation of nephrologists, biochemists and clinical pharmacologists. He left a historical impact in the international medical and scientific community.

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