

Milestones and the lifetime achievements of a scientist and clinician –

Happy Birthday Professor János Radó!

By Ágnes Haris



One of the prominent events of 2020 is our celebration of Professor János Radó's 90th birthday and the 66th anniversary of his medical practice. János Radó's outstandingly successful career's specialty is that in his professional work patient care has been closely associated with his experimental interest, mutually facilitating each other. This polyhistor-type approach is exemplary for the young generation working in medicine.

After completing medical university (1948-1954), Professor Radó commenced clinical practice in the János Hospital in Budapest as a junior internal medicine resident. Thanks to his

diligence, widespread interests and outstanding intellectual quality, his professional career rose very quickly; he was quickly assigned as a senior resident and still at a young age became an assistant professor. Although he devoted his work to patient care since beginning, he was also engaged in clinical science as early as his medical university years. As he stated later in one of his publications* – he became “attracted by science.”

His first scientific experiences originated from daily clinical practice. Soon after receiving his diploma he published some of his observations about the clinical manifestations of infectious mononucleosis in 1954 and Waterhouse-Friedrichsen syndrome in 1955. His career has been substantially influenced by his excellent teachers, including István Rusznyák, Pál Gömöri, Imre Magyar, Gyula Petrányi, Imre Haynal, Imre Shill and Imre Fodor. Together with Professor Fodor he published a number of articles in 1956 about the effect of mercurial diuretics and the treatment of refractory edema. By 1958, which was the year of his first medical specialty exam, he had already written several articles in prestigious English and German language journals. At that time his interest was attracted by the mechanisms of edema generation and the effects of diuretic drugs. In addition, he documented numerous significant observations about characteristics of internal medicine diseases not or hardly known at that time, such as the course of polycythemia or dissemination of herpes zoster infection in patients under corticosteroid treatment.

Since the 1960s his investigations were oriented toward fluid and electrolyte homeostasis and the influence diuretic drugs had on it. He made one of his most important discoveries at that time, a new isotope diagnostic tool, the “furosemide renography,” the methodology of which he first published in the *Lancet* in 1967.

His never ending curiosity and search for relationships between causes and consequences led him to discover several adverse drug effects. He was the first who described how carbamazepine caused water intoxication, published in 1973 in the *British Medical Journal*; hallucinosis provoked by Halidor; and paradoxically increased diuresis by glibenclamide. The discovery of hyponatremia as an adverse event of clofibrate administration and the hyperkalemic paralysis caused by spironolactone have also been attributed to him.

Since the 1970s his studies have been primarily focused on the clinical manifestations of nephrogenic and central diabetes insipidus; the diuretic effects of desmopressin and other drugs with diuretic effects; and the clinical characteristics and treatment options of renal tubular acidosis.

Between 1976 and 1978 he worked for Utrecht University as an invited researcher. His task was to introduce in Netherlands the renal clearance studies, glomerular filtration and plasma flow measurements he had previously worked out in Hungary. He also studied the disorders of potassium homeostasis; described the “upright-” or “outpatient-hyperkalemia”; and published about the consequences of aldosterone secretion abnormalities, the effect of osmolality on potassium homeostasis and the glucose induced paradox hyperkalemia.

In 1980 he completed his master’s thesis about diuretic and antidiuretic drugs. In 1995 he finished his dissertation on the form of a habilitation process with the topic of renal and nephrogenic tubular acidosis, and, in 1999, he was awarded the title of Doctor of the Hungarian Academy of Sciences, with his thesis describing interactions between disease and drugs regarding potassium metabolism.

Professor Radó was the head of the 3rd Department of Internal Medicine in Uzsoki Hospital, Budapest between 1980 and 1996. These years were characterized by his activities in establishing a school for his younger colleagues. Among his coworkers from that time - with his stimulation and help - many of us also became “attracted by science.” During the 1990s each physician working in his department wrote papers, either presenting interesting cases or researching, reviewing topics of fluid and electrolyte disorders. But we learned more than just “doing research.” Professor Radó taught us the right approach to highlight the relationships and interactions of diseases that covered the wide profiles of medications including their effects and adverse effects, which all have to be considered during the practice of a medical profession. Daily medical rounds provided lifetime professional experiences and also reinforced the idea that an excellent physician can only be a person who is cultivated and has a wide range of vision and humanity. Our workdays were characterized as passing in a friendly atmosphere flavored by humor, in which he ensured not only professional progress but personal development for each of us. For all who were interested in research he taught the technic of systematic data collection and the precise, high quality work necessary for scientific investigations and, not least, he highlighted the beauty of providing presentations and publications.

Radó’s professional career in the 2000s was engaged in writing books and book chapters. Moreover, he edited the Hungarian periodical, *Hypertension and Nephrology*, with great success and, as fruits of his pensioner-years, he established and presently augments the rich material of the Nephrological Historical Committee of the Hungarian Society of Nephrology.

His prominent activity as a researcher is highlighted by his outstanding publications. Between 1954 and 2019 he published almost 400 articles and he is continuously writing articles today. The number of his citations exceeds 1,000 which indicate that his scientific results provide basis for several other scientists' research. Importantly however, Professor Radó has always prioritized his love for and commitment to his patients. This is nicely shown (in his own opinion) as he considered one of his most important achievements the establishment of the Dialysis Unit in Budapest's Uzsoki Hospital, which provided the opportunity for saving uremic patients' lives. He did not abandon caring for them even after finishing his assignment as head of department; he continued clinical activity as a consultant physician for patients suffering nephrological or endocrinological diseases.

Several medical societies have acknowledged Prof. Radó by awarding him precious prizes: the Semmelweis Award in 1972; the Markusovszky Award in 1989; the Batthyány Strattmann László Award in 1996; and the Korányi Sándor Award in 2004. In 2005 he was honored with the Lifetime Achievement Award for the Hungarian Nephrology by the University of Debrecen and in the same year with the Gömöri Pál Award. In 2007 he received the Lifetime Award of the Hungarian Foundation of Nephrology and in 2012 he was given the Eszter Török Medallion. Among the highlights of his success, in 2012 he was elected as a "Pioneer of the European Archives of Nephrology."

Reviewing his professional activity it is unquestionable that clinical research represents extraordinary importance for him, yet, according to the 2012 interview he gave for the Archives he felt that emphatic patient-physician relationship and winning patients' confidence have outstanding significance. He pointed out the importance of treating the patient as an individual, even in the era of evidence-based medicine, and that in our everyday clinical work it is critically important to afford sufficient time and energy for the patients.

A summary of Professor Radó's achievements would not be complete without mentioning his wife, Maria Löffler, who has provided him a stable, loving background and continuous support. We congratulate her as well for these achievements and wish her good health!

This short summary has been prepared as an appreciation for our teacher and ideal, wishing by this article a very happy birthday for him!

* A complete list of János Radó publications can be found at inhn.org/profiles.

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