

20th Anniversary of Budapest Nephrology School: History and Lessons

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Abstract: Nephrology practice and research in Hungary was strong in the last century. Sándor von Korányi, founder of renal pathophysiology, was the first who applied freezing point reduction to measure osmotic activity of urine and coined the term renal insufficiency. After a decline in the standards of nephrology practice in the 1970s to 80s, I established the Hungarian Kidney Foundation in order to revitalize nephrology in Hungary and the region. Besides, a PhD programme was successfully introduced together with the Budapest Nephrology School (BNS). During the 20 years of its history the BNS became one of the most successful one-week-long CME refresher nephrology course having more than 1500 students representing 61 countries. BNS is a meeting point of young talented nephrologists and dedicated experts proving that personal contacts, discussions cannot be substituted by books, videos or internet. BNS has been a unique tool to once again bring Budapest into the center of attention and recognition for the development of regional nephrology.

Keywords: Budapest Nephrology School, Hungarian Kidney Foundation, CME refresher course on nephrology, Nephrology PhD School, Semmelweis University.

BACKGROUND

Hungary is located in the heart of Europe and has a special and interesting history. Hungarians arrived to the Pannonia basin more than 1000 years ago from the Asia, the Ural Mountain taking with themselves special habits and very sophisticated language which is unique in this region. They gained a lot of experience during their centuries long migration through two continents. The *first baptized and crowned King of Hungary in the year 1000 was St Stephen who was a charismatic truly European and Christian ruler. He was exemplary and always managed to do justice to the demands of the state as well as the requirements of the gospel of Christ. In the "Saint Stephen's admonitions to his son Emeric", one can read the following: "... a country using only one language and having only one custom is weak and frail". He advises his son to invite foreigners and make them settle down; arguing that their knowledge increases his power* [1].

Cardinal Giuseppe Caspar Mezzofanti (1774 – 1849), in Thomas Watts Transactions of the Philological Society 1855, wrote the following:

"Are you aware that that there is a language that because of its constructive ability and the harmony of its rhythm I have placed on the same level as Greek and Latin? It is the Hungarian language! I know the poems of the new Hungarian poets and their music has completely enchanted me. Keep your eye on future developments and you will witness such upsurge in poetic genius, which will totally justify my prediction!" [2].

Nephrology practice and research in this country was strong in the last century. Gabriel Richet (1916-), doyenne of French Nephrology, described Sándor von Korányi (1866 – 1944) as the "founder of renal pathophysiology" [3]. Von Korányi was the first who applied freezing point reduction to measure osmotic activity of urine, measured renal function by concentrating ability and coined the term "renal insufficiency" and hypostenuria [4, 5].

During the 1970s to 80s, however, there was a decline in the standards of nephrology practice. There were still activities and research in some restricted areas of the discipline but it was far from the traditional standard. As a young third year medical student I started my research (1970) at the Physiology Department at the time when the whole Department was dedicated exclusively to nephrology research. I sadly witnessed the weakening of this focused activity in Hungary. Meantime, I had the chance to gain experience at different international laboratories from Bergen University (Knut Aukland), University of Alabama in Birmingham (Gabriel L Navar, Suzanne Oparil), Harvard (Barry Brenner, Barbara Ballermann), Heidelberg University (Roland Taugner), University of Montpellier (Albert Mimran), Tulane University (Gabriel L. Navar), etc. The dangerous tendency for the future of nephrology in Hungary was clear and I was determined that we could stop this tendency and turn it around. In 1987, I established a private, charity foundation, the Hungarian Kidney Foundation (HKF, Registration No: 596) in order to support this idea. The initiative came into existence to address the issue of nephrology at a national level and with a holistic approach. The motto of the initiative was "revitalize nephrology in Hungary and the region" [6]. It is worth mentioning that the HKF was the first health-related public, non-profit endowment in Hungary after the Second World War when the civil activity was hindered by socialism. Hungarian Kidney Foundation is devoted to support nephrology

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education, research and patient care in Hungary and neighboring countries.

Following St. Stephen's advice, scientists and clinical nephrologists from Hungary and around the world were invited to support the idea in any way they could to help to develop a new nucleus of a nephrology center, a center of excellence, which now is called the International Nephrology Research and Training Center based at the Semmelweis University Budapest. In over two decades of constant work, the center has trained a remarkable number of young nephrologists from Hungary and other countries. They received trainings in Budapest, the USA, Canada and Germany at our partner universities. The philosophy was to support the most talented young investigators who were expected to undertake the education of other younger physicians in Hungary [7]. The HKF fellows have actively participated in graduate and post-graduate (PhD) education at the Semmelweis University, as well as in continuing education programmes for physicians. They have also produced a considerable record in publication of peer-reviewed publications, hand-outs and medical circulars.

Besides the establishment of HKF, I initiated the accreditation of the nephrology PhD programme in 1993, when the PhD system was first introduced in Hungary. So far, 47 young doctors have received their nephrology PhD in basic or clinical fields. 27 of these young scientists have worked under my direct supervision as the Head of the Doctoral School of Basic Sciences at Semmelweis University, Budapest [8].

For 25 years in addition to serving as an academic nucleus, the HKF has provided grants, supported and organized several inter-departmental and international networks, established awards, supported graduate and postgraduate education, patient education, prevention and rehabilitation with special emphasis on psychonephrology which is a kind of Hungarian speciality. We are convinced that psychonephrology is a form of psychosocial medicine, which puts emphasis on the complex rehabilitation of the patient suffering from kidney disease, in order to treat mental, psychological and social problems together, combing their complexity. This is a new approach of treating renal patients, as the main accent is - beside alleviating somatic abnormalities - on the sick patient's personality, taking consideration of his or her personal and environmental facilities. Psychonephrology considers most importantly the psychosocial status of the diseased person, including his or her position in the family and society, and by influencing positively this environment, helps coping with the disease.

HKF established a full scale of awards; the Harsing Award for the young basic scientists and the Taraba Award for the young clinical scientists. I. Mucsi, J. Peti-Peterdi, P. Hamar, A. Szabó, A. Masszi, A. Sebe, G. Kökény are among the Harsing Award laureates and MZ. Molnár, K. Torry, M. Novák, B. Vásárhelyi, Sz. Dolgos are among the Taraba Award laureates.

A unique silver art-work weighing (half a kilogram was designed to represent the "Silver Plate Award" of the Hungarian Kidney Foundation. This award was established to provide a high recognition to those who have greatly contributed to the development of Hungarian nephrology. It

was introduced in 1990, and was designed by the famous Hungarian artist Miklos Melocco. I. Taraba (post humus), G. Schulman, E. Ritz, G. Hercz, U. Heemann, S. Vas, J. Bargman, TE. Andreoli, PD. Bell, J. Peti-Peterdi, A. Wiecek are the laureates of this prestigious award. In 2002, the Silver Plate Award of the Hungarian Kidney Foundation was selected as a nationally recognized artwork and a true copy is now on display at the Hungarian Museum of Medical History. Finally an award called For Nephrology (made by Pál K) was given to J. Radó, J. Nagy, I. Kiss, F. Perner, J. Szegedi to appreciate their lifelong achievements in the Hungarian nephrology.

BUDAPEST NEPHROLOGY SCHOOL: IMPORTANCE AND CHARACTERISTICS

The idea of the Budapest Nephrology School was born in my mind when I attended the International Society of Nephrology meeting in Florida (1992). I asked the then ISN president late Roscoe Robinson (Ike) to lend his support to the establishment of a regional education center in Central Europe to foster the development of nephrology in exsocialist countries. I reasoned that Budapest was the ideal place for such an activity with the great tradition of high level education, the benefits of low cost, convenient location and easy follow up. It was indicated that in this way a center in Budapest would be able to educate and train a critical mass of local young talented nephrologists who otherwise would not be able to afford the refresher courses in the developed world.

Ike recognized the meaning of the aide and nominated Gerald Schulman, a Harvard trained nephrologist from Vanderbilt University, to organize all the necessary support. Gerald not only participated from the very beginning at every course in Budapest, but he organized the donation of laboratory equipment from Vanderbilt University Medical Center and delivery to Budapest the following year right after the start of the course. Initially, there were no funds available to send the equipment to Hungary. He managed to convince the Hungarian Ambassador to America, Peter Zwack, to help in transportation of the equipment.

I also invited Eberhard Ritz from Heidelberg from the very beginning, and he has become the most dedicated faculty member of this course. He never missed the School during the last 19 years and will be with the young doctors in Budapest this year too.

The very first course was two days long with participants from Hungary and Transylvania. The following year it was already three-days long, later changing to a one-week course accredited by the European office. The 19th Budapest Nephrology School, for instance, was accredited by the European Accreditation Council for Continuing Medical Education (EACCME) for 30 European CME credits (ECMEC's). The Course included 46 hours of scientific lectures and a final test which could be locally evaluated according to national standards (in Hungary it is equal to 50 CME credits).

Each year, participants from more than 25 countries attend the school. This school, which has received the imprimatur of the International Society of Nephrology (ISN), the European Dialysis and Transplant Association (EDTA) and the European Kidney Research Association (EKRA), is

a superb institution for introducing new basic science and clinical information to trainees and new nephrologists. Participants have come to attend this school from all parts of Europe and all other continents. State-of-the-art lectures, live discussions, EU accredited CME credits, a pleasant environment in the beautiful city of Budapest, excellent management and hospitality together with a strikingly low participation fee make this school attractive and a must-to-attend. There is a mutual sense of satisfaction for both the participants and the faculty. The participants are satisfied with the high standard of the lectures and the faculty enjoys educating the very interactive and enthusiastic young physicians. About 1500 young nephrologists may disseminate at home his or her knowledge gained at BNS so far. One third of the participants were supported by the Hungarian Kidney Foundation.

As an international recognition of this school, on the ceremonial 10th anniversary of the Budapest Nephrology School (2003), on behalf of the school and all my colleagues, I received the special honorary Diploma of the President of ISN and the Dean Medal of the Vanderbilt University (USA).

Quality of the CME courses mainly depends on the faculty. The faculty of the Budapest Nephrology School is just unbelievable. During the past 20 years the following experts served as lecturer and educators meaning that they spend days with the young participants to discuss their problems: T. Andreoli, J. Balla, J. M. Bargman, C. Baylis, P. Bárány, P. D. Bell, W. van Biesen, R. Blantz, B. M. Brenner, M. E. De Broe, R. de Châtel, D. Cohen, E. Cole, A. J. Collins, R. Coppo, W. Couser, A. Covic, P. Csermely, A. Davison, Gy. Deák, G. Devins, J. Dirks, T. B. Drücke, Cs. Dzsiniich, K-U. Eckardt, A. Falus, Cs. Farsang, J. Feehally, M. Fischeder, L. G. Fine, J. Floege, A. Fogo, D. Fouque, M. Geiszt, P. Gergely, D. Goldsmith, M. S. Goligorsky, S. Goral, J. G. Grunfeld, S. Halperin, Á. Haris, L. Harper, U. Heemann, A. Heidland, J. H. Helderman, G. Hercz, L. Hunyadi, E. J. Holtzman, A. Horváth, A. Iaina, N. Ismail, B. Iványi, K. Jager, J. Járny, V-M. Kahari, K. Kauser, D. Kerjaschki, M. Ketteler, J. T. Kielstein, I. Kiss, H. Klinkmann, E. Kolossváry, G. Kovács, Cs. P. Kovesdy, R. T. Krediet, K. Kurokawa, S. Van Laecke, N. Lameire, R. Langer, A. Logan, N. Levin, M. Little, F. Locatelli, G. M. London, F. Luft, A. MacLeod, G. Mayer, O. Mehls, D. C. Mendelssohn, A. Meyrier, I. Mucsi, S. Mustata, G. A. Müller, H. Mürer, J. Nagy, D. Naimark, S. Nielsen, M. Novák, R. Oberbauer, K. Olgaard, H. H. Parving, M. Paul, F. Perner, J. Peti-Peterdi, R. Pisoni, K. Polner, J. Rees, E. Ritz, B. Rodríguez-Iturbe, C. Ronco, P. Ronco, L. Rosivall, B. Rutkowski, Rychlik, I. Sadayoshi, B. Sarkadi, D. ScLöndorff, H. Schmidt-Gayk, G. Schulman, K. Skorecki, E. Slatopolsky, S. Sonkodi, G. Spasovski, Spät, Z. Stevanovic, T. Szabó, B. Szamosfalvi, M. Tapolyai, V. Tesar, Tislér, J. Titze, S. W. Tobe, T. Tóth, T. Tulassay, R. Vanholder, S. Vas, P. Venetianer, J. J. Weening, A. Wiecek, I. Wittman, D. De Zeeuw, P. Å. Zillén.

This course is organized in the way that the faculty and the participants are together during the period of the training. They are roomed in the same hotel, and share the same social programs. There are poster sessions ("Bring your own problems and results to discuss") to help them in

communication. The active dedicated participants are also a key prerequisite for the successful CME course. It is amazing that it attracts participants from New-Zealand to Mongolia, from US to Brazil. Until now, 61 countries are represented among the participants:

Albania, Algeria, Austria, Bahrein, Belarus, Belgium, Bosnia and Herzegovina, Brazil, Bulgaria, Canada, China, Croatia, Czech Republic, Denmark, Ecuador, Egypt, England, Estonia, France, Germany, Greece, India, Indonesia, Iran, Israel, Italy, Japan, Jordan, Jugoslavia, Kasachstan, Kenya, Latvia, Libya, Lithuania, Macedonia, Moldova, Mongolia, Montenegro Netherlands, New Zealand, Nigeria, Norway, Pakistan, Poland, Portugal, Qatar, Romania, Russia, Serbia, Slovakia, Slovenia, South Africa, Sri Lanka, Sweden, Switzerland, Turkey, USA, Ukraine, United Kingdom, Venezuela.

BNS is a meeting point for the faculty and talented young fellows. In several cases the young fellows have met the faculty at BNS and are now working in their laboratories.

Budapest Nephrology School is not only a refresher course of nephrology but it is a true cultural experience. From the very beginning we do have boat tour on the Danube experiencing the breath-taking panorama of the castle, Gellért Hill and the bridges linking Pest and Buda bays. Visit the Hungarian Parliament and Organ Concert in St. Stephen Basilica, one of the biggest and most beautiful domes, is also part of the sightseeing program aiming to introduce the worldwide recognized cultural life and beauty of Budapest.

VANDERBILT UNIVERSITY MEDICAL SCHOOL

The cooperation of Vanderbilt University with the Budapest Nephrology School and the Semmelweis University is the true example of a successful joint educational undertaking. The Budapest Nephrology School is indebted to the foresight of Professors Rosco Robinson, John Dirks and Barry Brenner for fostering relations between developing and established nephrology programmes. In particular, Prof. Robinson charged Professor Gerald Schulman with evaluating the needs of the Nephrology School at Semmelweis University as well as the basic sciences resources at the medical school. Schulman has remained as an eminent member of the Budapest Nephrology School for over a decade. Working closely with us, they managed to establish a sister relationship between Semmelweis and Vanderbilt University Medical Schools. This relationship allowed transfer of medical equipment from Vanderbilt and start-up funding for a cell culture laboratory.

UNIVERSITY OF TORONTO

The University of Toronto/Semmelweis University Nephrology Sister relationship programme was established by the great contributions of Gavril Hercz. This program undertook several projects and a key innovation was the sponsorship of Hungarian nephrology fellows, who were integrated into the Toronto fellowship programme with the unlimited support of J.M. Bargman. The Hungarian fellows spent 2 to 3 years in clinical and research pursuits prior to their return to Hungary where they were able to disseminate the lessons learned. This joint fellowship programme is still

ongoing. Another successful undertaking was the integration of University of Toronto nephrology faculty members into the Budapest Nephrology School. This was enthusiastically embraced by the Toronto group as it allowed for a unique opportunity to disseminate information not only to Hungarian attendees but also to nephrologists and trainees from many other countries. The ripple effect of both the annual meeting and the returning nephrology fellows continues to be markedly pronounced in Hungary. Both the Hungarian fellows that returned from Toronto and the Hungarian attendees at the School, in their local travels throughout the surrounding countries, continued the process of passing on vital information gained. In this way a small seed that was planted has grown into quite a large oak.

NEPHROLOGY BOOK

The collective efforts of the faculty of the Budapest Nephrology School, the insights of the editors and the technical support of the Hungarian National Press have culminated in the creation of the monograph of BNS in the form of a book entitled: *Nephrology, Hypertension, Dialysis and Transplantation* (Editors: the late T. Andreoli, E. Ritz, L. Rosivall, 655 pages, 2nd edition, ISBN 963 218 8322, State Printing Co, Budapest, 2006)

Thomas E. Andreoli (1935–2009) a Distinguished Professor and Chair Emeritus of Internal Medicine at the University of Arkansas for Medical Sciences College of Medicine and past president of both the International Society of Nephrology and the American Society of Nephrology, was also a frequently arriving faculty member. At the time of his death he was editing the eighth edition of his very much loved book: *“Andreoli and Carpenter's Cecil Essentials of Medicine”* and already had the ticket to Budapest in his pocket.

Throughout these years many people, faculty and organizers, have contributed constantly and worked hard on the development of the Budapest Nephrology School with little expectations or remuneration, if any. We are greatly thankful to all the faculty members, including those who could not participate in compiling the book due to their other commitments. I have witnessed how our respectable faculty allowed themselves only a minimal rest after a transatlantic or long European travel and preferred to spend their time with the participants and help them solve their problems, teach and inspire them. I was always inspired, motivated and moved. Our special thanks are due to Drs. T. Andreoli, J.M. Bargman, J. Dirks, T.B. Drücke, G. Hercz, F. Locatelli, E. Ritz, G. Schulman and J.J., Weening and all those who have always so warmly and generously supported the Budapest Nephrology School. The Semmelweis University, Hungarian Kidney Foundation, ISN, COMGAN, EDTA/ERA, EKRA, the Hungarian Nephrological Society, Vanderbilt University and University of Toronto have been the major patrons of the school in the past decade.

It is appropriate to quote the words of the international experts of nephrology if I wanted to correctly picture the Budapest Nephrology School. They believe:

“... it is a pleasure for the International Society of Nephrology to recognize the tradition established by Dr. Rosivall and his colleagues in the heart of Europe, servicing so

many colleagues in their quest for knowledge. Experts from various parts of the world have contributed to render the Budapest School into one of the best of its kind. We congratulate Dr. Rosivall on this momentous achievement.” Jan J. Weening, ISN President.

“As a President of ERA-EDTA association I'm very proud that our Society is a sponsor of the Budapest Nephrology School that next year will celebrate the 10th Anniversary. The best comment about the quality of this school come from a letter I received from one of the participants at last school “I was fortunate to be one of the sponsored delegate by the ERA. I do not have any words to express my sincere gratitude to the ERA and especially you for considering me for the grant from ERA.” I do believe there are no other words to add!” Francesco Locatelli, President of ERA-EDTA.

“The Semmelweis University under the dedicated leadership of Professor Rosivall has developed the tradition of an annual Nephrology Summer School in Budapest... The panel of experts is impressive and has included some of the top leaders of nephrology in the world. In recognition of the high standard of this meeting, both the International Society of Nephrology (ISN) and the European Renal Association (ERA) co-sponsor this important event.” Eberhard Ritz, Chairman of ISN COMGAN Committee for Central/Eastern Europe, Andrzej Wiecek, on behalf of ERA-EDTA

“The number “18” in Hebrew is translated into the word which means life. The Budapest Nephrology School breathes life into the world of nephrology by bringing together students from all over the globe. The Budapest Nephrology School represents by far one of the most important and exciting nephrology educations worldwide”. Karl Skorecki

“I learned a lot!” Bernardo Rodriguez-Itturbe

“My first visit leaves wonderful impressions of dedication to excellence and learning and teaching in nephrology”. Agnes Fogo

“It is not “what I do not know”-but rather “what I do not know, that I do not know”. That is the important question”. Fred Luft

“After a nostalgic trip to Budapest I greatly enjoyed the 19th Budapest Nephrology School and look forward to the 20th event”. Eberhard Ritz

CONCLUSION

Since their inception, the Hungarian Kidney Foundation and the Budapest Nephrology School have prompted a steady improvement of nephrology education standards in Hungary and Central Europe. They are important contributors of the revitalization of the Hungarian

nephrology which happened during the last 25 five years. Budapest is again recognized as a center of excellence in European nephrology. The advancement of young nephrologists not only results in a better patient-care outcome, but also adds to the socio-economic status of the region. The courses organized each year allows nephrology specialist to meet from around the world and also increases chronic kidney disease awareness in the general public, both leading to favorable diagnostic and rehabilitation outcomes for kidney patients. This year (2013) the 20th anniversary of the Budapest Nephrology School is being celebrated.

The Budapest Nephrology School is much more than just a CME course, it is a meeting point of young talented nephrologists and dedicated famous experts in this field. It is a professional and cultural event and a get together. No books, no videos, or any other technical modern solution which may substitute the personal contact in depth chats and nonverbal communications. BNS is just like the old time classical universities, people from all over the world meet the masters and discuss!

CONFLICT OF INTEREST

The author confirms that this article content has no conflict of interest.

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SUPPLEMENTARY MATERIAL

Supplementary material is available on the publisher's web site along with the published article.

REFERENCES

- [1] Scriptoresrerum Hungaricarum tempore ducumregumquestirpis Arpadianaegestorum I-II. ImreSzentpétery, Budapest: Hungarian Academy of Sciences, 1937-38.
- [2] Transactions of the Philological Society. 1855. - No. 14. April 13, 1855. Joseph Hunter, Esq., in the Chair: The Following Paper was Read: - "On the Recent History of the Hungarian Language;" by Thomas Watts, Esq.
- [3] Richet G. KorányiSándor a vesekórélettanánakmegalapozója. Hypertonia Nephrol 1999; 3:314
- [4] Richet G. Edema and Uremia from 1827 to 1905: the first faltering steps of renal physiopathology. Kidney Int 1993; 43:1385-96.
- [5] Andreoli TE, Ritz E, Rosivall L, Eds. In memory of Alexander von Korányi. Nephrology, Hypertension, Dialysis, Transplantation. Budapest: Hungarian Kidney Foundation 2006; pp. 5-7.
- [6] Peti-Peterdi J, Navar LG, Darwin Bell P, *et al.* A true champion of Hungarian kidney research and nephrology education--tribute to LászlóRosivall. Acta Physiol Hung 2009; 96(3): 375-82.
- [7] Mirza Hosseini S. Hungarian Kidney Foundation and Budapest Nephrology School, Nephrology, Hypertension, Dialysis, Transplantation. In: Andreoli TE, Ritz E, Rosivall L, Eds. Budapest: Hungarian Kidney Foundation. 2nd revised ed. 2006; pp. 25-30.
- [8] School of PhD Studies Semmelweis University. Budapest: Semmelweis Publisher 2011.

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