Laudatio

Professor Maria Ratner

Moscow (Russia)

Bechterev’s Institute. Dr M. Ratner graduated at the Kazan Medical School in 1942. Immediately after graduation, she was sent to a military hospital, where she served as a physician until the end of the second world war.

The beginning of Dr M. Ratner’s scientific life coincided with the last years of Stalin’s terror. From 1948 onwards, his policy was devoted to the ‘fight against the Cosmopolitans’. Stalin’s fight was a well-organized campaign with multiple goals. Firstly he interrupted all scientific contacts with the West. Soviet scientists were deprived of all access to foreign literature, they were not allowed to publish in foreign journals, and even mentioning achievements of western science was forbidden. For Soviet scientists it was also forbidden to travel abroad. Second, in 1949, the infamous ‘Pavlov’s meeting’ of the National Academy of Sciences and of the Academy of Medical Sciences took place. This meeting approved the idea that every physiological and pathological process was a reflection of the activity of the central nervous system and stated that this was the only valid scientific theory in life sciences. All opponents to this theory (amongst them Dr M. Ratner, her mother and many of her colleagues) were regarded as enemies of progress and ‘enemies of the Soviet system’ and were treated accordingly. Many of them lost their jobs and the few of the fortunate ones who continued their work had to do so under extremely difficult conditions. They were prevented from teaching students and from carrying out any research that was not in-line with the official party line. Furthermore, they lived under constant fear to be expelled from the scientific community. Thirdly, in 1952, the infamous ‘doctor’s plot’ took place. This was an allegation that doctors had attempted to kill Party leaders. The victims of this plot were the most prominent Soviet doctors of medicine and the majority of them were Jews.

Under such conditions, Dr M. Ratner started her research carrier as a postgraduate student at the Pavlov Institute of Physiology in St Petersburg under the guidance of the famous Russian psychiatrist and neuropathologist Vladimir M. Bechterev. After his death in 1927, she headed Bechterev’s chair of psychiatry for almost 25 years. Dr M. Ratner’s father, Professor Jacob Ratner, was the head of Department of Endocrinology at St Petersburg Institute of Experimental Medicine in 1945. Her mother, Raisa Ya. Golant, an outstanding Russian psychiatrist, was one of the closest assistants of the famous Russian psychiatrist and neuropathologist Vladimir M. Bechterev. After his death in 1927, she headed Bechterev’s chair of psychiatry for almost 25 years. Dr M. Ratner’s father, Professor Jacob Ratner, was the head of Department of Endocrinology at

Interaction between Russian and western European nephrologists has been hampered in the past because of restrictions to meet and to maintain scientific exchange. On January 1, 1999, Maria Ratner has been honoured as a ‘distinguished investigator’ of the Transplantation Institute in Moscow. I am grateful for the invitation by NDT to report her curriculum vitae and to make this pioneer of Russian nephrology known to the nephrological community abroad.

Maria Ratner was born in 1920 in St Petersburg. Her mother, Raisa Ya. Golant, an outstanding Russian psychiatrist, was one of the closest assistants of the famous Russian psychiatrist and neuropathologist Vladimir M. Bechterev. After his death in 1927, she headed Bechterev’s chair of psychiatry for almost 25 years. Dr M. Ratner’s father, Professor Jacob Ratner, was the head of Department of Endocrinology at
outstanding Russian physiologist Professor V. Chernigovsky. She made pertinent observations concerning the pathogenesis of arterial hypertension. Using the experimental model of hypertension-induced in rabbits by cutting the depressor nerves of the aorta and the carotid arteries, she managed to prove that renal denervation prevents the occurrence of neurogenic hypertension. She further showed that this was mediated by suppression of renin secretion, thus providing one of the first proofs of neurogenic stimulation of renin secretion. The results of these studies were published in the Soviet Journal of the Academy of Medical Science, i.e. Bulletin of Experimental Medicine in 1953. The final results were summarized in Dr M. Ratner’s second thesis on the problem of the renal pressor factor in the pathogenesis of essential hypertension in 1958. These studies were not taken note of by the western scientific community. At this period, Soviet medical and biological research was viewed in the west as an offshoot of the official Lysenko line, as a result whatever research came from the then Soviet Union did not attract serious attention. Lysenko was a charlatan who purported to have provided scientific proof for marxism by some biological experiments which were completely fraudulent as we know today. A few years after Stalin’s death in 1953, the political situation in the Soviet Union improved. However, anti-Semitism, although not life-threatening, continued. Therefore, Dr M. Ratner, being a Jew and not being a member of the Communist Party could not expect to attain any position of prominence in the Soviet scientific community. In 1956 she was invited by the known Soviet physician, Professor M. Vovsi to his clinic in Moscow as a senior scientific researcher and Dr M. Ratner started her research career in nephrology. In 1957 in one of the Moscow hospitals, she organized the first Department of Nephrology in Russia and headed the investigation on glomerulonephritis there.

In 1965, Dr Ratner was invited to head the Department of Nephrology in the Institute of Pediatrics where she continued her research on the problems of clinical pathophysiology and of the natural history and therapy of glomerulonephritis. Four years later, she was promoted to be the head of the Department of Chronic Renal Failure in the Moscow Institute of Transplantatology where she continued to work for almost 30 years.

By that time, together with the pathologist V. Serov, she made important observations concerning tubular dysfunction in glomerulonephritis. She showed the dependence of renal tubular functional disturbances on the presence of tubulointerstitial injury. The first publication of these studies appeared in 1966 in the Soviet journal Archives of Pathology. It was the time when biological science in Russia had just started to recover from destructive restrictions. But under the conditions of the ‘iron curtain’ the majority of scientists were still not able to establish contacts with the western scientific community and to publish their results abroad. Only 20 years later, Dr M. Ratner managed to publish her results in Nephron (1985; volume 39), Kidney International (1983; volume 23) and EDTA Proceedings (1982; volume 19). Together with Professor V. Serov she demonstrated that tubular dysfunction in glomerulonephritis is correlated (i) with the presence of tubulointerstitial changes, (ii) with glomerular morphology and (iii) with the clinical presentation of the disease. It was found that urine osmolality and the capacity to concentrate urine were only moderately decreased in mesangioproliferative glomerulonephritis and more markedly impaired in membranous glomerulonephritis. A pronounced decrease in this function, but also in ammoniagenesis, secretion of hydrogen ions and water excretion were shown to be typical of membranoproliferative glomerulonephritis and particularly of FSGH/S.

At the same time, M. Ratner carried out extensive studies on the treatment of renal disease. The results of these investigations were published in the Soviet journals, Clinicheskaya Medicina, Sovetskaya Medicina, and Terapevtichesky Archiv during 1961–1987. She was the first in Russia to perform renal biopsy, to administer high doses of corticosteroids in glomerulonephritis and to provide low protein diet in chronic renal insufficiency. At that time, i.e. in the sixties, this was not an easy task, because of the hostile atmosphere prevailing since the time of the anticosmopolitan campaign which created scientific conservatism and immobility.

The life-long research of M. Ratner culminated in a new approach to classify primary glomerular diseases. She showed that the prognosis of glomerular disease was determined more by the clinical presentation than by the morphological type. Proceeding from this assumption she categorized glomerulonephritis into nephrotic syndrome and nephritic syndrome and distinguished three types of nephritis: hyperactive, active and inactive. She divided the nephrotic syndrome into the pure nephrotic syndrome and the nephrotic-hypertensive syndrome.

Dr M. Ratner published more than 300 scientific papers. In addition to being a brilliant scientist, Dr M. Ratner devoted much energy to train a generation of nephrologists. Her pupils head Departments of Nephrology in Moscow, in many Russian cities, and cities of former Soviet Republics.

She was one of the founders of the Society of Nephrology in the Soviet Union. Even now, at an advanced age, she continues to work. Currently, Dr Ratner is the chairman of the Moscow Society of Nephrology and has recently been promoted as the ‘Leading Scientist of the Institute of Transplantology’.

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