Development of nephrology and renal replacement therapy in Lithuania since 1989—an update

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Introduction

Lithuania was the first state which had separated from the Soviet Union in 1990. It was the result of Lithuanian Reform Movement ‘Sąjūdis’ which started in 1988.

Before 1989 nephrology and especially renal replacement therapy (RRT) were underdeveloped in Lithuania. After the dramatic socio-economic changes following the implosion of the Soviet bloc, significant progress in nephrology and dialysis has occurred. The aim of this communication is to provide information on the status of nephrology, dialysis and transplantation in Lithuania in the past and present.

Basic demographic data

Lithuania is a parliamentary republic with a territory of 65,200 km² and a population of 3.7 million inhabitants. It is the largest of the three Baltic countries. The population density is 56.8 per km². The population is 67% urban and 33% rural; 21.9% of the population is under 15 years, 61% is of working age and 17.1% is retired. The life expectancy for males is 63.5 years and for females it is 75.0 years.

Nephrology and renal replacement therapy in Lithuania in 1989

In 1989 there were only two departments of nephrology, one renal transplantation centre and four haemodialysis (HD) units with 31 HD stations in Lithuania (8.7 pmp). All of these specialized facilities were concentrated in the capital city, Vilnius. Only two small HD centres with three dialysis stations each were present in Kaunas and Panevėžys respectively. Both acute and chronic HD were performed. The chronic dialysis population was made up exclusively of relatively young patients, i.e. potential candidates for renal transplantation. Diabetic patients were excluded. Acetate HD was used throughout. Water purification was provided by mechanical filtration of water. Most dialysis machines were manufactured in the Soviet Union. Peritoneal dialysis (PD) was used very rarely for acute renal failure. Renal transplantation was performed in the Vilnius University Hospital, at a rate of approximately 30–40 kidneys per year.

At that time nephrology was separated from HD and transplantation. Consequently, physicians working in nephrological departments had no experience in HD and transplantation. Renal biopsies were performed by nephrologists. The rate was 20–30 biopsies per year.

The system of training in nephrology was quite primitive: 3 years practical work in a nephrological or dialysis or transplantation department, a 4–8 week course in nephrology (at the university hospitals in Vilnius, Minsk, Moscow, etc.) and a formal exam was all that was required to be qualified as an nephrologist.

The main moments of development of nephrology and RRT during period of 1989–1999

Since 1989 major developments have taken place.

1. Foundation of the Lithuanian Society of Nephrology, Dialysis and Transplantation in 1992 (at present there are 143 members).
3. Reorganization of financing and supplies of medical care, especially of HD, which is paid by the State Patient Fund.
5. Establishment of new, and development of existing, HD centres.

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7. Introduction of a new system of residentship in nephrology similar to Western standards in 1995 (1 year of primary care, 2 years of internal medicine, 2 years of nephrology).

8. Foundation of a Council of Nephrology, Dialysis and Transplantation in the Ministry of Health Care in 1996, to co-ordinate activities in nephrology and RRT throughout the country.


The development of nephrology and RRT in Lithuania during the first part of this period was uncoordinated and based mainly on enthusiasm of local physicians and charity from Western countries. This stage was characterized by the spontaneous establishment of many small HD centres all over the country.

Thanks to collaboration between Lithuanian and Western hospitals and personal contacts between renal specialists, it was possible to obtain second-hand dialysis equipment, medication, literature, etc. Upon a request from the Danish Association of Renal Patients, the Danish Government donated three new water treatment machines and considerable dialysis equipment. An Association of German and Baltic Physicians organized training for nephrologists in different hospitals in Germany and donated a number of HD machines. In total, Lithuania’s HD centres received more than 100 HD machines from Germany, Sweden, France, Denmark and other countries. The most prominent role in the charity organization was played by B. Nielsen (Denmark) and H. H. Wegener (Germany) and in promotion of educational activities by J. Daugirdas (USA), N. Lameire (Belgium) and E. Ritz (Germany). CAPD was started thanks to a charity—the staff was trained and the first patients were supplied by Baxter Company free of charge.

After 1991 the financing of medical care was reorganized several times. At present the State Patient Fund is paying 70 USD for each HD procedure. In addition the Social Insurance Company finances EPO and some medication. Because of the low reimbursement rates the development of private dialysis is slow: in 1998 the first two private HD centres were started. Currently they have 5% of all HD stations.

A very important contribution to the improvement of nephrological training in Lithuania was the organization of short educational courses in nephrology with experts from Western countries. The first such meeting was devoted to haemo- and peritoneal dialysis and was organized in Birštonas on May 1995 in collaboration with the University of Illinois College of Medicine in Chicago, International Society of Artificial Organs and Kaunas Medical University. The symposium director was J. Daugirdas (Chicago). The faculty comprised W. D. Black (Knoxville), J. Coburn (Beverly Hills), C. Cruz (Detroit), S. Horn and J. Horina (Graz), B. Nielsen (Copenhagen), B. Rippe and A. Traneaeus (Huddinge), R. Ward (Louisville). The 110 participants came from Lithuania, Latvia, Poland, Russia and Byelorussia.

On May 1996 the Commission for Central and Eastern Europe of the International Society of Nephrology (ISN) together with the European Renal Association–European Dialysis and Transplantation Association (ERA–EDTA) and the Kuratorium ‘Gesellschaft für Nephrologie’ organized a 2-day ‘Update in Nephrology’ for nephrologists of the three Baltic States. This course took place in Kaunas and was locally organized by the Nephrological Clinic of Kaunas Medical University. The course directors were E. Ritz (Heidelberg) and N. Lameire (Gent). The faculty comprised M. Goldman (Brussels), J. P. Grünfeld (Paris), N. Ismail (Nashville), H. K. Koomans (Utrecht), J. Passlick-Deetjen (Düsseldorf), E. B. Pedersen (Aarhus), Y. Pirson (Brussels) and C. Ponticelli (Milan). A total of 119 physicians attended the course. The course was followed by a Satellite Seminar ‘Treatment options in chronic renal replacement therapy’, sponsored by Fresenius Company.


In 1998, sponsored by the TEMPUS-PHARE programme, the seminar ‘Renal replacement therapy’ took place in Kaunas (R. Vanholder and A. Dhondt, Gent).

In 1999 the 3rd Baltic Meeting on Nephrology took place in Vilnius. The meeting was chaired by B. Dainys and V. Razukas (Vilnius) and B. Rutkowski (Gdansk). Approximately 500 physicians from Poland, Lithuania, Latvia and Estonia participated. Invited lecturers included: H. Klinkmann (Rostock), G. E. Knoyan (Houston), S. Massry (Los Angeles), F. Valderrabano (Madrid) and others.

Training of young nephrologists and donations of medical literature were organized as a part of ISN Renal Sister Centres programme linking two Lithuanian centres and centres from Belgium and France.

The contributions from the Western countries to training and financial support played a significant role in the development of nephrology and RRT. Such help is deeply appreciated.

Nephrology and renal replacement therapy in Lithuania at the end of 1998

Currently nephrological centres taking care of clinical nephrology and HD are present in the five largest cities
of Lithuania. Two of them (in Vilnius and Kaunas University hospitals) have academic affiliation: training of students, residents, fellows, practical doctors. In total there are 71 nephrologists, 270 nephrological beds and 60 beds for paediatric nephrology. About 160 renal biopsies were performed last year and were evaluated in Vilnius Pathological Centre by a dedicated pathologist. The main indication for renal biopsy is proteinuria, the most common findings seem to be IgA nephropathy and immune complex-mediated membrano proliferative glomerulonephritis. A Lithuanian registry of renal biopsies is currently being developed. The main aim of this registry will be prospective follow-up of patients after renal biopsy.

Very significant changes happened in RRT, especially HD. At the end of 1998 we had 21 HD centres with 122 HD stations and 363 HD patients (98 pmp). In 1998 the incidence of new HD patients was 70 pmp. The main underlying diseases of prevalent patients on HD are chronic glomerulonephritis (36.1%), chronic pyelonephritis (19.3%), diabetes (12.4%), polycystic kidney disease (10.2%). Dialysis quality has been improved: 42% of patients were on bicarbonate HD; in 47.9% of patients the weekly duration of HD was 12 h and more. There was substantial improvement of anaemia control in HD patients: the percentage of patients with severe anaemia (Hb < 80 g/l) decreased from 25.5% in 1997 to 11.8% in 1998; 89.5% of all HD patients were on EPO therapy. 71.9% were on iron supplements (27.4% of them i.v.). Annual mortality of HD patients was high: 20% for all HD patients (27.6 pmp).

Since 1997 PD, started by charity in Lithuania, is paid for by the State Patient Fund for a limited number of patients (less than 20). The rate of renal transplantation (6.8 pmp) decreased significantly in 1998 compared to 1997 (22.1 pmp). Paradoxically, this course of events took place when a new transplantation law had been introduced in 1996.

Remaining problems

In the period 1989–1998 Lithuanian nephrology made significant progress. This was achieved by the enthusiasm of Lithuanian nephrologists and facilitated by help from Western colleagues.

Nevertheless, serious problems remain:

1. We have many ‘nephrological’ beds which are occupied by disabled HD patients or patients living in remote areas. The nephrological services are still highly concentrated in one city. There are nephrologists with narrow expertise working only in dialysis units or only in clinical nephrology wards, or only with transplanted patients. We have only one experienced renal pathologist and his leaving poses problems.

2. There are too many small HD centres. About 75% of all HD machines are older than 5 years. The quality of water purification remains problematic. Many patients are starting HD too late on an emergency basis.

3. PD is concentrated in one centre. Other centres have no possibilities to select this dialysis modality. Although the cost of PD is still higher than that of HD, the difference is constantly decreasing. Unfortunately, the State Patient Fund limits the number of PD patients and thus stops any further increase of PD.

4. Because of the need for another centre of transplantation, Kaunas Medical University Clinics plans to start an organ transplantation programme.

5. Funding of research activity in nephrology is low. Currently most of scientific studies deal with epidemiological research, especially in end-stage renal disease.