Renal replacement therapy in Slovenia: annual report 2001

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Abstract
The total number of end-stage renal failure patients treated by renal replacement therapy increased, from 1435 at 31 December 2000 to 1542 at 31 December 2001 (7.5% increase). At the end of 2001, 771 p.m.p. end-stage renal failure patients were treated by renal replacement therapy in Slovenia, 73% of them with haemodialysis, 7.4% with peritoneal dialysis and 19.7% had a functioning graft. Incident (new) patients in 2001 were 144 p.m.p. The number of haemodialysis patients increased by 7% compared with the year before, the number of patients on peritoneal dialysis decreased by 3.4% and the number of patients with a functioning graft increased by 13.9%. The gross mortality rate of dialysis patients was stable between the years and was 10.4% in 2001. Erythropoietin therapy was prescribed to 87.3% of dialysis patients (88.9% of haemodialysis patients and 71.7% of patients on peritoneal dialysis). The number of dialysis patients positive for hepatitis B or hepatitis C virus is relatively low, 3.2% of all dialysis patients; an increased number of MRSA-positive dialysis patients is observed in 2001 (2.9% of all dialysis patients). The epidemiology of renal replacement therapy in Slovenia is in general comparable with that of the countries of the European Union.

Keywords: dialysis; end-stage renal disease; kidney transplantation; renal replacement therapy

Introduction
The present report provides an update of the epidemiology of end-stage renal disease (ESRD) treated by renal replacement therapy in Slovenia in the year 2001.
This report is based on the extensive centre questionnaires, prepared by the Expert Group for Dialysis at the Slovenian Ministry of Health. The response rate to all questions from the questionnaires was 100%. The population of Slovenia is ~2 million.

Dialysis centres
There were 17 dialysis centres in Slovenia at 31 December 2001, 14 in-hospital centres and three private, out-patient dialysis centres. One of the 14 in-hospital centres is for paediatric cases and one is a centre for peritoneal dialysis at the University Medical Center of Ljubljana. The private, out-patient centres treated 15.7% of haemodialysis patients.

Prevalent patients
The data of prevalent ESRD patients on different forms of renal replacement therapy are presented in Table 1. The annual increase in the year 2001 was 7.5%, with the most pronounced increase in the number of patients with a functioning graft. In the years 2001 and 2000, a decrease in the number of patients treated by peritoneal dialysis is observed.
Dialysis patients

**Diabetics.** A total of 185/1238 (14.9%) prevalent dialysis patients in 2001 were diabetics; 156/1125 (13.9%) were treated by haemodialysis and 29/113 (25.6%) by peritoneal dialysis.

In 2000, 192/1168 dialysis patients were diabetics (16.4%); 162/1051 (15.4%) were treated by haemodialysis and 30/117 (25.6%) by peritoneal dialysis.

In 1999, 176/1129 or 15.5% of prevalent dialysis patients were diabetics; 138/1000 (13.8%) were treated by haemodialysis and 38/129 or 25.7% by peritoneal dialysis.

**Elderly.** In 2001, 472/1238 (38.1%) of prevalent dialysis patients were ≥65 years old; 447/1125 (39.7%) were treated by haemodialysis and 24/113 (22.1%) by peritoneal dialysis.

In 2000, 412/1168 (35.2%) of prevalent dialysis patients were ≥65 years old; 385/1051 (36.6%) were treated by haemodialysis and 26/117 (22.2%) by peritoneal dialysis.

**Incident patients**

There were 288 new (incident) end-stage renal failure patients reported in 2001, corresponding to 144 patients per million of population (p.m.p.). This number may be an overestimation, because the report is based on centre questionnaires, and the same patient could be counted more than once as a new patient.

A total of 63/288 (21.9%) of new ESRD patients in 2001 were diabetics; 54/264 (20.5%) were treated by haemodialysis and 9/24 (37.5%) by peritoneal dialysis.

In 2000, 48/214 (22.4%) of new patients were diabetics; 44/195 (22.6%) starting haemodialysis and 4/17 (23.5%) starting peritoneal dialysis.

A total of 106/288 (36.8%) of new ESRD starting renal replacement therapy were ≥65 years old; 99/265 (37.5%) starting haemodialysis and 7/24 (30.7%) starting peritoneal dialysis.

**Gross mortality rate**

During 2001, 125 dialysis patients died; 114 had been treated by haemodialysis and 11 by peritoneal dialysis. The gross mortality rate (calculated by dividing the number of patients that died by the average of prevalent dialysis patients at the end of 2000 and 2001) was 10.4%; 10.5% for the patients on haemodialysis and 9.6% for the patients on peritoneal dialysis. From all dialysis patients who died in 2001, 32/125 (25.6%) were diabetics.

In 2000, 120 dialysis patients died; 111 on haemodialysis and nine on peritoneal dialysis. The gross mortality rate in 2000 was 10.45%; 10.8% for chronic haemodialysis patients and 7.3% for peritoneal dialysis patients. From all dialysis patients who died in 2000, 40/120 (33.3%) were diabetics.

In 1999, 121 dialysis patients died; 110 patients had been on chronic haemodialysis and 11 on peritoneal dialysis. The gross mortality rate in 1999 was 10.96%; 11.3% for haemodialysis and 8.8% for peritoneal dialysis patients.

**Renal transplantation**

There is one transplant centre in Slovenia, at the University Medical Center of Ljubljana. Since 1 January 2000, Slovenia is a member of Eurotransplant.

During 2001, 47 cadaveric renal transplantations were performed in Slovenia. In 45 patients, it was the first and in two, the second graft. One transplant recipient was older than 60 years and one younger than 18 years. Diabetic nephropathy was the cause of ESRD in five patients. All grafts transplanted in 2001 were functioning on 31 December 2001. At the end of 2001, there were 304 patients with a functioning graft in Slovenia.

Three renal transplant recipients with a functioning graft died in 2001 and nine transplant recipients have started chronic dialysis because of end-stage graft failure.

The total number of renal transplantations in Slovenia from 1970 to 31 December 2001 was 455, 124 from a living related donor and 331 from a cadaveric donor.

At the end of 2001, 129 dialysis patients were on the waiting list for a cadaveric renal transplantation.

**Transmissible diseases in haemodialysis units**

At the end of 2001, 41 dialysis patients were positive for hepatitis viruses, 20 for hepatitis B and 21 for...
hepatitis C, representing 3.2% of the dialysis population. All positive patients are isolated from others. At the end of 2000, 36 dialysis patients (3.1%) were positive for hepatitis viruses, 15 for hepatitis B and 21 for hepatitis C.

During 2001, 36/1238 (2.9%) were positive for MRSA; 32 on haemodialysis and four on peritoneal dialysis. During 2000, 19 dialysis patients were positive for MRSA; 14 on haemodialysis and five on peritoneal dialysis. MRSA-positive patients are isolated from others.

There were no HIV positive patients on chronic renal replacement therapy up to the end of 2001.

**Erythropoietin therapy in dialysis patients**

A total of 1081/1238 (87.3%) of all dialysis patients received recombinant human erythropoietin on 31 December 2001; 1000/1125 (88.9%) patients on haemodialysis and 81/113 (71.7%) patients on peritoneal dialysis.

On 31 December 2000, 977/1168 (83.6%) of dialysis patients received erythropoietin; 896/1051 (85.2%) on haemodialysis and 81/177 (69.2%) on peritoneal dialysis.

**Haemodialysis procedures and monitors**

Bicarbonate haemodialysis was standard treatment for 1107/1125 (89.5%) haemodialysis patients; three patients were treated with acetate haemodialysis (0.3%), 33 (2.9%) with acetate-free haemodialysis and 82 (7.2%) with on-line haemofiltration or haemodiafiltration.

On 31 December 2001, there were 351 haemodialysis monitors, 160 (45.6%) from Gambro, 147 (41.2%) from Fresenius, 25 (7.1%) from Hospal-Integra, 14 (4%) from Braun and five CRRT monitors from Prisma-Hospal (1.4%).

**Conclusions**

The prevalence, incidence and mortality rates of patients in Slovenia treated with renal replacement therapy and the type of renal replacement therapy are comparable with those of countries from the European Union [1–5]. The number of patients with a functioning graft showed the highest increase; the number of haemodialysis patients also increased, while a slight decrease of patients treated with peritoneal dialysis was observed. The number of patients positive for hepatitis B and C was low, but an increased number of patients positive for MRSA was observed. The majority of dialysis patients were treated with human recombinant erythropoietin.

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**References**