

Co-morbidity and Access to Renal Transplantation within Europe: an ERA-EDTA Registry Study



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Introduction

Co-morbidity affects the prognosis of patients with end stage renal disease. Knowledge on co-morbidity is therefore considered to be important in this patient group. Little is known, however, about differences in co-morbidity in patients starting renal replacement therapy (RRT) among European countries. Moreover, although many studies have shown the negative effect of co-morbidity on survival in patients starting RRT, it is not examined how co-morbidity affects access to renal transplantation (Tx) within Europe.

In this study we compared the prevalence of co-morbidity in patients starting RRT between European countries and the effect of co-morbidity on access to Tx.

Methods

In this ERA-EDTA special study, 17907 patients from Austria, Italy (Lombardy), Norway, Spain (Catalonia) and the United Kingdom (England/Wales) were included (1994-2001). Co-morbidity was recorded at the start of RRT. Analyses were performed in co-morbid conditions that were comparable between the European countries, including diabetes mellitus (DM), ischemic heart disease (IHD), peripheral vascular disease (PVD), cerebrovascular disease (CVD), and malignancy (MAL).

Results

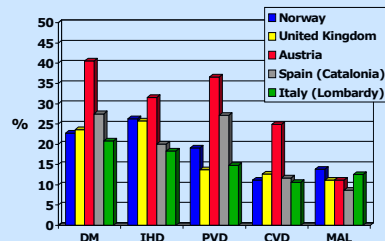


Figure 1. Co-morbidity by country

Figure 1 shows that the prevalence of co-morbidity was highest in Austria but that the differences were relatively small between the other countries. The higher prevalence of DM in Austria is associated with a higher prevalence of IHD, PVD and CVD. In spite of the relatively small differences in prevalence, we found a north-south trend for the prevalence of IHD.

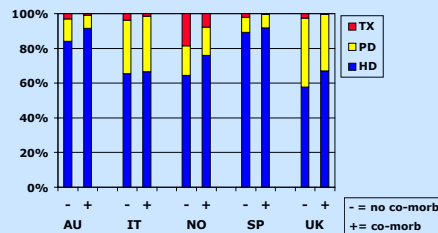


Figure 2. Treatment modality at day 91, by co-morbidity (+/-) and country

Figure 2 shows that there are important international treatment differences at day 91. Compared to the other countries, the percentage of patients on peritoneal dialysis (PD) was higher in Italy and the UK, whereas the number of patients on Tx was higher in Norway. These international differences in treatment modality could not be explained by co-morbid variability.

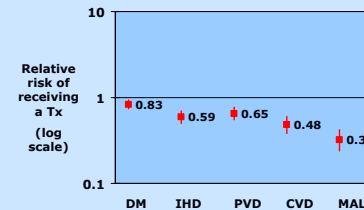


Figure 3. Relative risk of receiving a first Tx within four years after the start of RRT, by co-morbidity; Cox regression analysis adjusted for age, gender, country, year of start and other co-morbidities (patients with a specific co-morbidity were compared with patients without that specific co-morbidity)

Figure 3 shows that the presence of each co-morbidity made it less likely to receive a Tx. This chance was least affected by the presence of diabetes and most affected by the presence of malignancy.

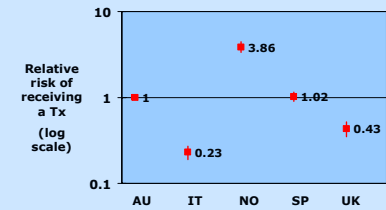


Figure 4. Relative risk of receiving a first Tx within four years after the start of RRT, by country (Austria = reference); Cox regression analysis adjusted for age, gender and year of start

Figure 4 shows that the access to Tx differed substantially between the countries. For instance, patients in Norway were almost 4 times more likely to receive an allograft compared to Austria. These patterns of differences between countries existed for patients with and without co-morbidity.

Table 1. Availability of kidney donors and the number of dialysis patients per million population, by country

	Austria	Italy, Lombardy	Norway	Spain, Catalonia	UK, Engl./Wales
Number of Tx performed in 2001 (pmp)	48.0	26.1 ‡	46.6	63.2	29.8
Prevalence of dialysis pts on Dec 31, 2000 (pmp)	369.7	614.6 §	142.3	558.4	260.0

‡ Number of transplants performed in 1997; § Number of dialysis patients on December 31, 1996

The international differences in access to Tx as shown in Figure 4 may relate to the availability of kidney donors and the number of dialysis patients (see Table 1). Despite the fact that Spain (Catalonia) has the highest availability of kidney donors, the access to Tx was lower compared to Norway, because of the high number of dialysis patients in Spain (Catalonia).

Conclusions

- The prevalence of co-morbidity was highest in Austria but differences were small among other countries. The higher prevalence of DM in Austria is associated with a higher prevalence of IHD, PVD and CVD.
- The chance of receiving a Tx was most affected by the presence of malignancy, and least affected by the presence of diabetes.
- International differences in access to Tx were primarily due to differences in the availability of donor kidneys in relation to the number of dialysis patients, and could hardly be explained by co-morbid variability.