



Overview of the Belgian Donor and Transplant Statistics 2006: Results of Consecutive Yearly Data Follow-up by the Belgian Section of Transplant Coordinators

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ABSTRACT

Background. The Belgian Section of Transplant Coordinators, created in 1997 under the auspices of the Belgian Transplant Society, is in charge of the collection of the national data about donor/procurement activities.

Methods. Data are collected in all Belgian transplant centers. An annual report is finalized by combining these data with data from the Eurotransplant database.

Results. An increase of both potential donors ($n = 501$, +14.4%) and effective donors ($n = 273$, +16.7%) was observed in 2006 versus 2005. Among effective donors, 28 were non-heart-beating donors (10.25%). Overall donor ratio was 26.26 donors per million inhabitants. Within potential donors, absence of organ harvesting was due to medical contraindications (28%), family refusal (13%), or legal refusal (2%). Donor mean age was 46.4 years and mean organs/donor was 3.21 ± 1.7 . An overall reduction of Belgian waiting lists was observed in 2006 as compared with 2005 (-5.7% for kidney, -25.7% for liver, -9.4% for heart, -6.7% for lung, and -11.7% for pancreas), while waiting list mortality was 18% for liver, 11% for heart, and 7% for lung. As compared with 2005, transplant activities increased for kidney ($n = 485$, +24.3%), heart \pm lungs ($n = 73$, +7.3%), and lungs ($n = 83$, +39.4%) but decreased for liver ($n = 236$, -2.1%). Living donation represented 8.45% for kidney (+28.1% vs 2005) and 8% for liver transplantation (-29.6%).

Conclusion. Globally, a marked increase of procurement and transplant activities was observed in 2006, allowing to limit waiting list and waiting list mortality. Further increase of living donor activity and non-heart-beating donation remains necessary to extend the donor pool.

SINCE the foundation of the Belgian Transplant Society (BTS) in 1993, the Belgian transplant coordinators were linked with the different donor and transplant national programs. Belgium, which is organized as a transplant center-based coordination model, has been always in the top five of the world donor statistics. Since 1987, a weakened presumed consent has been installed and, for the last 5 years, Belgium reported an average of 24 donors per million inhabitants. Belgium is part the Eurotransplant organization, along with Austria, Germany, Luxemburg, Slovenia, The Netherlands, and recently Croatia. On November 25, 1997, the first meeting to install officially Belgian Section of Transplant coordinators (BSTC) was organized. Priority was given to an official national statute

for those who are performing the job of transplant coordinator in Belgium. Therefore, job descriptions of each coordinator respectively were analyzed. Official recognition

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of the BSTC by the BTS was approved in 1998, and ever since the BSTC has been officially mandated to collect the data nationally as well as to present the data in the different councils directly or indirectly represented by the BTS. Different initiatives to improve donation originated from the BSTC. Awareness programs within in the Belgian government, schools, and medical profession were directly supported by the BSTC. Some side initiatives were supported from out of the group. Recently, the Belgian government launched an overall national awareness campaign to improve donation rates on the different levels within the Belgian society. Furthermore, a special initiative to focus on medical support and donor detection was created under this campaign. Yearly data collection on waiting list, donation, and transplantation statistics remains one of the significant contributions from the BSTC to the BTS and the national data for government and press and is widely used to analyze and improve the national numbers. We report herein the annual data for 2006 and compare them with 2005.

METHODS

A common database was identified and approved by the BSTC and sent to the different data collectors in every transplantation center nationally. Main data collection was linked to donation activity. Items on donor potential, effective number of donors, non-heart-beating donors (NHBD), percentage of refusals, organ yield, and donor profile items were collected. Additionally, data on waiting list dynamics and transplantation activity were collected through the data support systems of the Eurotransplant organization.

RESULTS

Waiting List Dynamics

Compared with 2005, on overall decrease of the number of patients on waiting list on December 31 was observed (Table 1). At least for kidney and lung, this was not due to a reduction of new waiting list registration. Waiting list mortality was 7.3% on kidney, 18% on liver, 11% on heart, and 7% on lung waiting lists, respectively. Of note, for liver, waiting list mortality regularly increased in the last 3 years (7.4% in 2004, 15% in 2005, and 18% in 2006). An increase of new waiting list registrations was seen in 2006 for kidney and lung, while a decrease was noticed for heart and pancreas.

Donor Statistics

In 2006, a 16.7% increase of effective donor procedures was observed as compared with 2005 (Table 2), resulting in

Table 2. Donor Statistics

Potential Donors		Effective Donors		Potential NHBD		Effective NHBD	
2005	2006	2005	2006	2005	2006	2005	2006
438	501	234	273	24	63	8	28

NHBD, non-heart-beating donor.

26.26 donors per million inhabitants. This was related to a 14.4% increase of the number of potential donors (Table 2). Among the potential donors, 292 (58.3%) were referred from collaborative donor hospitals and 209 (41.7%) from transplant centers. A referral increase per month in 2006 was noticed from July, exponentially until December. Comparing both periods, the average referral per month for January until June was 35.1 donors per month versus 48.3 donors per month for the period July until December 31, 2006, respectively. The conversion rate turning the potential donors into effective procedures was 54.3%, identical to the ratio of 54.1% in 2005.

From all potential donors, reasons of no donation were: medical contraindications in 141 (28.1%), refusal by relatives in 69 (13.8%), refusal in the State Registry in 11 (2.19%), and refusals by the coroner in 7 (1.39%). Both potential NHBD and effective conversion rate markedly increased in 2006 as compared with 2005 (potential NHBD: +162% and conversion rate from 34% in 2005 to 45% in 2006). Reasons of death were differentiated among heart-beating donors (HBD) and NHBD. Comparing HBD and NHBD groups, 48% versus 30% ($P = .1$) died of a cerebrovascular accident, 34% versus 36% ($P = .71$) died of a trauma, 14% versus 29% ($P = .32$) died of brain anoxia, and 6% versus 13% ($P = .74$) died of other reasons. Classifying the NHBD potential into the Maastricht Classification, 54 (85.7%) donors were category III NHBD, 8 (12.7%) were category II, and 1 (1.6%) was category IV NHBD, respectively.

For the global donor population, the mean age for effective donors was 46.4 years, including 30% of the donors younger than 40 years of age. The total average of organ yield per donor was 3.21 ± 1.7 organs. The mean organ yield per donor and per age category was 3.19 organs in the age group <20 years, 3.68 organs in the age group 20 to 40 years, 3.02 organs in the age group 40 to 60 years, and 1.67 organs in the group ≥ 60 years. Comparing the HBD group versus the

Table 1. Waiting List Dynamics in 2005 and 2006

	New Waiting List Registration		Number of Patients on Waiting List on the December 31		Waiting List Mortality (%)	
	2005	2006	2005	2006	2005	2006
Kidney	506	526	966	911	7.6	7.3
Liver	214	226	249	185	15	18
Heart	95	88	32	29	17	11
Lung	82	100	60	56	9	7
Pancreas	55	42	34	30	1	4

NHBD, there was a significant difference between the average organ yield (3.36 vs 1.99, respectively, $P = .03$).

Transplant Activity

Out of the 273 donors, Belgium contributed 897 transplantable organs to the Eurotransplant organ pool. Comparing 2006 versus 2005, kidney transplant activity increased to 485 (+24.35%, $P = .03$), liver transplant activity slightly decreased to 236 (-2.11%, $P = .713$), heart (+lungs) transplantation slightly increased to 73 (+7.35%, $P = .07$), and a strong increase was seen for lung transplant activity to 83 (+39.4%, $P = .001$). Living donation was 8.45% and 8.05% of kidney and liver transplant activity, respectively. Living kidney donation increased with 28.1% ($P = .01$), and living liver donation decreased with 29.6% ($P = .04$) compared to 2005.

DISCUSSION

In 2006, the Belgian statistics showed a marked donor activity increase together with a subsequent impact on waiting list dynamics and transplantation activity. Notably, an increase of living donor activity and of non-heart-beating donation was reported. The BSTC, in cooperation with the BTS, has increasingly contributed to better report-

ing and follow-up of all national donor and transplant activity. Optimized cooperation and reporting contributed to a centralized policy to battle organ shortage within Belgium. For the first time, Belgium reported a donor activity higher than 26 donors per million inhabitants, and an average increase of 10% of the referred potential number of donors in the last 5 years. Extension of NHBD represents one strategy to reduce organ shortage. An increase of the NHBD activity was indeed observed in Belgium this last year. However, this tendency alone does not explain the increase of effective donors. As a matter of fact, both HBD and NHBD increased in 2006, reflecting also that NHBD did not benefit from a shift from potential deceased donors. In parallel, several campaigns have been undertaken this last year, combining the efforts of the BSCT and the BTS with focused initiatives, supported by the Belgian government. These efforts have led to a decrease in family refusals as well as an increase in donor referral for 2006, resulting for the first time in the last 6 years in a significant decrease of waiting lists for kidney and liver transplant patients. This positive trend in combination with further increase of living and NHBD significantly impacted the national statistics.