

**Building a liver transplant program in a resource limited country: a 15-year retrospective analysis of 648 patients operated in the Romanian National Program**

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**ABSTRACT**

**Background:** Liver transplantation (LT) has become an established treatment for end-stage liver disease, with more than 20.000 procedures yearly worldwide. The aim of this study was to analyze the results of Romanian National Program of LT after 15 years of activity.

**Methods:** Between April 2000 and April 2015, 648 pts received 678 LTs in Romania. Male/female ratio was 382/266, while adult/pediatric ratio was 588/60, with a mean age of 45 years (median 50 yrs; range 7 months – 68 yrs). Main LT indications were HBV-related cirrhosis (176 pts; 27.1%), hepatocellular carcinoma (128 pts; 19.7%), and HCV-related cirrhosis (118 pts; 18.2%). Waiting time and indications for LT, patient and donor demographics, graft features, surgical procedures, and short and long-term outcomes were analyzed.

**Results:** DDLT was performed in 532 pts (82.1%): whole LT in 512 pts (79%), split LT in 16 pts (2.5%), reduced LT in 2 pts (0.3%), and domino LT in 2 pts (0.3%). LDLT was performed in 116 pts (17.9%): right hemiliver in 78 pts (12%), left lateral section in 26 pts (4%), left hemiliver in 7 pts (1.1%), left hemiliver with segment 1 in 3 pts (0.4%), and dual graft LDLT in 2 pts (0.3%). Overall major morbidity rate was 43.8% (284 pts), while perioperative mortality was 7.9% (51 pts). Retransplantation rate was 4.6% (30 pts): 23 whole LTs, 3 reduced LTs, 3 split LTs, and 1 LDLT. Long-term overall 1-, 3-, and 5-year estimated survival rates for patients were 88.8%, 82.5%, and 79.2%, respectively, while for transplanted grafts were 77.9%, 71.6%, and 68.8%, respectively ( $p < 0.001$ ). Median waiting time for LT decreased significantly over time: from 107, 99, 51, and 45 months to 28, 18, 34, and 20 months in case of OI, AII, BIII, and ABIV group pts, respectively. One-year overall mortality on waiting list also decreased significantly over time from 31.4% to 11.8%.

**Conclusions:** The liver transplantation program in Romania addresses all causes of acute and chronic liver failure or liver tumors in adults and children, using all surgical techniques. The program constantly increased over time, leading to less time and lower mortality rate on the waiting list.

**Abbreviations:** LT: liver transplantation, DDLT: deceased donor liver transplantation, LDLT: living donor liver transplantation, HBV: hepatitis B virus, HCV: hepatitis C virus, HCC: hepatocellular carcinoma, ECD: extended criteria donors, MELD: model of end-stage liver disease, PELD: pediatric end-stage liver disease

**Key words:** Liver transplantation, high-volume transplantation center; national experience

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