

Short Communication

Role of Early Extubation in Decreasing Morbidity and Mortality in Liver Transplantation

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Abstract

The aim is to evaluate whether early extubation influences short- and medium-term postoperative morbidity and mortality.

Keywords: Morbidity; Mortality; Liver transplantation

Introduction

Early extubation is a fundamental element integrated into enhanced recovery protocols in Orthotopic Liver Transplantation (OLT).

The surgical technique of liver transplantation has improved in recent years. Simultaneously, the anesthetic technique has also improved. Early extubation of patients undergoing OLT is one of the cornerstones of early recovery. It is valuable to analyze the impact of this technique in terms of potential risks, potential benefits, safety, etc. to further advance on fast track of OLT [1,2].

Material and Methods

A cohort of 209 patients operated on for OLT in a tertiary hospital in a period from January 2016 to December 2018 is retrospectively analyzed. Patients are divided into two groups: group 1: early extubation in ICU and group 2: delayed extubation. Mortality is compared between both groups in the first month, first and third year. Postoperative morbidity was also compared.

Results

Patients in group 1 (n=165, 79.9%) presented, with statistical significance, lower mortality at 1 month, 1 year and 3 years, shorter duration of admission to the critical care unit and of hospital stay, lower incidence of surgical reoperation, of re-transplantation, lower rate of transfusion of blood products, fewer pulmonary, digestive, neurological, cardiological, hemodynamic, renal, surgical, infectious, metabolic, thrombotic, vascular, and graft complications, less need for renal replacement therapy, less refractory ascites, and greater infectious risk. However, no statistically significant differences were found in the need for hospital readmission, in biliary, endocrine, nutritional, hematologic, thrombotic and hematologic complications, or in graft rejection (Table 1) [3].

In group 1, 6.6% of patients required reintubation. In group 2, 97% of patients could be extubated during the first week, 7.8% required noninvasive mechanical ventilation type BIPAP and 8.1% high flow. Only 2.8% of patients required tracheotomy [4].

Discussion

According to the current literature, early extubation allows some theoretical advantages associated with physiological spontaneous ventilation: it improves graft blood flow and eliminates the complications associated with invasive ventilation.

Several studies have recently been published in which early extubation after OLT reduces the morbimortality of the process. In addition, early extubation has been described to be cost-effective. This study aims to evaluate the results of the implementation of this technique in the working group of the Hospital Virgen del Rocío, which are similar to those published in recent literature.

Conclusion

The role of early extubation seems key to improve outcomes in OLT, as it reduces the incidence of multiple complications and mortality, with low reintubation rates. It is a feasible and safe procedure.

References

- Rodríguez-Laiz GP, Melgar-Requena P, Alcázar-López CF, Franco-Campello M, Villodre-Tudela C, Pascual-Bartolomé S, et al. Fast-Track Liver Transplantation: Six-year Prospective Cohort Study with an Enhanced Recovery After Surgery (ERAS) Protocol. *World J Surg.* 2021;45(5):1262-71.
- Mandell MS, Stoner TJ, Barnett R, Shaked A, Bellamy M, Biancofiore G, et al. A multicenter evaluation of safety of early extubation in liver transplant recipients. *Liver Transpl.* 2007;13(11):1557-63.
- Wu J, Rastogi V, Zheng SS. Clinical practice of early extubation after liver transplantation. *Hepatobiliary Pancreat Dis Int.* 2012;11(6):577-85.
- Biancofiore G, Bindi ML, Romanelli AM, Boldrini A, Bisà M, Esposito M, et al. Fast track in liver transplantation: 5 years' experience. *Eur J Anaesthesiol.* 2005;22(8):584-90.

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Table 1: Comparative results in terms of mortality and morbidity based on the extubation after liver transplantation: Group 1 (early extubation) vs. group 2 (delayed extubation).

Variable	EXTUBACIÓN PRECOZ	EXTUBACIÓN DIFERIDA	p
Mortality 1 ^o month (%)	1.1	8.5	0.02
Mortality 1 ^o year (%)	5.2	17	0.013
Mortality 3 ^o year (%)	9.8	23.4	0.016
Hospital stay (Days)	12.5	26.7	0.01
ICU stay (Days)	4.3	7.6	<0.05
Hospital readmission (%)	38.8	56.1	0.11
Surgical reintervention (%)	9.2	59.5	<0.05
Retransplantation (%)	2.8	22.2	<0.05
Cardiac complications (%)	25.3	68.4	0.001
Metabolic complications (%)	11.1	61.7	<0.05
Hemodynamic complications (%)	71.6	95.7	<0.05
Respiratory complications (%)	48.8	76.5	<0.05
Digestive complications (%)	25	48	<0.05
Kidney complications (%)	51.1	76.59	<0.05
Neurological complications (%)	20.9	51.1	0.001
Endocrine complications (%)	11.1	61.7	<0.05
Hematological complications (%)	28.3	93.6	0.001
Infectious complications (%)	25	51.1	0.001
Thrombotic complications (%)	1.7	2.1	0.34
Nutritional complications (%)	17.5	16.2	0.73
Vascular complications (%)	2.8	34	<0.05
Biliary complications (%)	24.2	23.4	0.1
Ascites (%)	48.25	29.78	0.017
Graft complications (%)	29.4	46.8	<0.05
Surgical complications (%)	21.9	63.8	<0.05
Primary graft dysfunction (%)	1.1	12.76	0.001
Rejection (%)	19.65	14.89	0.45
Reintubation (%)	3.2	18.4	0.003
Non-invasive mechanical ventilation (%)	9.9	36.2	0.001
Tracheostomy (%)	0	13.1	<0.05