



Revista Colombiana de Anestesiología

Colombian Journal of Anesthesiology

www.revcolanest.com.co



Scientific and Technological Research

Predictors of mortality and early detection strategies for hepatopulmonary syndrome in liver transplant patients[☆]



Margarita Orozco-Delgado^{a,*}, Martha López-Cantero^b, Vanessa Zampella^a,
Rosario Vicente^{c,d}, Juan Galán^e

^a MD, Resident of Anesthesiology and Resuscitation, Hospital Universitario i politècnic La Fe, Valencia, Spain

^b MD, Assistant Physician of Anesthesiology and Resuscitation, Hospital la Fe, Valencia, Spain

^c Head of the Anesthesiology and Resuscitation Department, Hospital Universitario i politècnic La Fe, Valencia, Spain

^d Coordinator of Resuscitation, Critical Care and Organ Transplants, Associate Professor, Universidad de Valencia, Valencia, Spain

^e Sectorial Transplant Coordinator, Head of the Transplant Coordination Service, Hospital Universitario i politècnic La Fe, Valencia, Spain

ARTICLE INFO

Article history:

Received 12 July 2015

Accepted 20 June 2016

Available online 2 September 2016

Keywords:

Hepatopulmonary syndrome

Liver transplantation

Hepatic insufficiency

Anesthesia

Mortality

ABSTRACT

Introduction: Hepatopulmonary syndrome (HPS) is a serious, progressive disease. Its pathophysiology resides in a hypoxic intrapulmonary shunt and severe clinical deterioration. Liver transplantation (LT) is the only effective treatment in appropriately selected patients.

Objective: To acknowledge the importance of early diagnosis of HPS.

Patients and methods: Observational, descriptive, retrospective trial including 8 patients with HPS that received LT between April 2006 and August 2014. The clinical data prior to transplantation and follow-up after the procedure were reviewed.

A multivariate analysis (stepwise forward logistic regression analysis) was used to identify the variable that could potentially increase the risk of death.

Results: Of the 8 patients, death could only be significantly predicted based on the pre-LT arterial blood partial oxygen pressure (PaO₂) ($p=0.002$).

The average pre-LT PaO₂ of the patients that died was 51.5 ± 2.49 SD, with a statistically significant difference ($p=0.002$).

None of the variables was statistically significant for HPS reversibility.

The survival rate of patients diagnosed with HPS following the LT was 62.5%.

Conclusions: The level of pre-LT hypoxemia is an important predictor for immediate postoperative mortality. Early detection of the condition is critical to reduce the post LT morbidity

[☆] Please cite this article as: Orozco-Delgado M, López-Cantero M, Zampella V, Vicente R, Galán J. Factores predictores de mortalidad y estrategias de detección precoz de síndrome hepatopulmonar en pacientes trasplantados hepáticos. Rev Colomb Anestesiología. 2016;44:311-316.

* Corresponding author at: Calle vicente raga 3, esc 2, 3-B 46023 Valencia, Spain.

E-mail address: margaorozco@hotmail.com (M. Orozco-Delgado).

and mortality so that the indication for transplant is made at the right time, regardless of the stage of liver disease. The most efficient clinical strategy could be the use of appropriate early detection protocols for HPS through screening of hypoxemia in patients with portal hypertension.

© 2016 Sociedad Colombiana de Anestesiología y Reanimación. Published by Elsevier España, S.L.U. All rights reserved.

Factores predictores de mortalidad y estrategias de detección precoz de síndrome hepatopulmonar en pacientes trasplantados hepáticos

R E S U M E N

Palabras clave:

Síndrome, hepatopulmonar
Trasplante de hígado
Insuficiencia hepática
Anestesia
Mortalidad

Introducción: El síndrome hepatopulmonar (SHP) es una enfermedad grave y progresiva cuya fisiopatología reside en un shunt intrapulmonar con hipoxia y deterioro clínico severo. Como único tratamiento efectivo se ha postulado el trasplante hepático (TH), en pacientes adecuadamente seleccionados.

Objetivo: Reconocer la importancia del diagnóstico temprano del SHP.

Pacientes y métodos: Mediante un estudio observacional, descriptivo, con carácter retrospectivo de 8 pacientes con SHP, a los que se les realizó TH en el período entre Abril 2006-Agosto 2014. Se han revisado los datos clínicos previos al trasplante y el seguimiento tras este.

Se empleó un estudio multivariante (stepwise forward logistic regression analysis), para determinar cual variable podría incrementar el riesgo de muerte.

Resultados: De los 8 pacientes, el resultado de muerte sólo pudo ser predicho significativamente por el factor presión parcial de oxígeno en sangre arterial (PaO₂) pre-TH (p=0,002).

La PaO₂ pre-TH promedio de los pacientes que fallecieron era de 51,5 +/- 2,49 DS, siendo la diferencia estadísticamente significativa (p=0,002).

Ninguna variable resultó estadísticamente significativa para reversibilidad del SHP.

La supervivencia de los pacientes con criterio de SHP posterior al TH fue de 62,5%.

Conclusiones: El grado de hipoxemia pre-TH es un factor predictor importante de mortalidad en el postoperatorio inmediato. La precocidad en la detección de la entidad es fundamental tanto para disminuir la morbimortalidad post TH como para indicar éste en el momento óptimo independientemente del estadio de la enfermedad hepática. Protocolos adecuados de detección precoz del SHP mediante screening de hipoxemias en pacientes con hipertensión portal, puede ser la estrategia clínica más eficiente.

© 2016 Sociedad Colombiana de Anestesiología y Reanimación. Publicado por Elsevier España, S.L.U. Todos los derechos reservados.

Introduction

The first publication evidencing the association between liver and pulmonary disorders was in 1884 by Fluckieger; however, it was not until 1977 that Kennedy and Knudson coined the term hepatopulmonary syndrome (HPS).¹ It was initially thought that this was a reversible condition and hence LT was contraindicated. The observation that HPS could be resolved after LT and that this was the only effective treatment to revert the condition was only made early in the 90s.

HPS is a low prevalence condition but with high morbidity and mortality that may severely compromise the functional status of patients with advanced liver disease and/or portal hypertension.² HPS results from impaired liver clearance of various vascular mediators leading to an imbalance between vasodilators and vasoconstrictors that causes abnormal intrapulmonary vasodilation and intrapulmonary shunt. The resulting disruption in arterial oxygenation not

always improves with supplemental O₂, with a clinical presentation of platypnea (dyspnea induced by upright posture) and orthodeoxia (>5% desaturation or >4 mmHg PaO₂ drop when moving from decubitus to an upright posture). These PaO₂ alterations are mainly the result of a ventilation/perfusion imbalance, with pulmonary shunt in addition to an impaired oxygen diffusion capacity due to the increased capillary diameter and reduced transit time of the erythrocytes through the capillaries as a consequence of the elevated cardiac output characteristic of HPS.³

The echocardiographic finding of an extracardiac and intrapulmonary shunt confirms the diagnosis.⁴ To differentiate whether the shunt is intra or extra cardiac the observation of whether the passage of microbubbles following an intravenous injection of cold stirred serum from both right and left cavities is early (<3 cardiac cycles), which will indicate intracardiac shunting, or late (>3 cardiac cycles) which will be diagnostic for intrapulmonary shunting. The diagnostic criteria for HPS are: "Partial oxygen pressure < 80 mmHg or

Download English Version:

<https://daneshyari.com/en/article/8616528>

Download Persian Version:

<https://daneshyari.com/article/8616528>

[Daneshyari.com](https://daneshyari.com)