CERPO

Centro de Referencia Perinatal Oriente

Facultad de Medicina, Universidad de Chile

FALLA HEPATICA AGUDA Y TRASPLANTE HEPATICO EN EMBARAZO

DRA ANA LUISA PEREZ

DR JUAN GUILLERMO RODRIGUEZ

- CUAL ES LA IMPORTANCIA DEL PROBLEMA
- CÓMO DIAGNOSTICAMOS UNA FALLA HEPATICA AGUDA
- CUALES SON LAS ETIOLOGIAS MAS FRECUENTES Y SU IMPORTANCIA
- QUE PACIENTES SE BENEFICIAN DE TRASPLANTE HEPATICO
- UNA VEZ TRASPLANTADAS CUAL ES SU RIESGO EN RELACION A TERAPIA
- PRONÓSTICO EN EMBARAZO

DEFINICIONES

- SE DEFINE COMO FALLA HEPÁTICA AGUDA EL DAÑO HEPATICO QUE DESARROLLA COAGUOPATIA Y ENCEFALOPATIA
- NECROSIS , APOPTOSIS Y RESPUESTA INFLAMATORIA SISTEMICA QUE PRODUCE FALLA MULTIORGANICA
- HIPERAGUDA , AGUDA Y SUBAGUDA , DEPENDIENDO DE LAS SEMANAS ENTRE EL INICIO DE LOS SINTOMAS Y LA APARICIÓN DE ENCEFALOPATIA

Deepak Joshi, Andra James, Alberto Quaglia, Rachel H Westbrook, Michael A Heneghan
LANCET 2010 ; 375 594-605

DEFINICIONES

- ALTA MORTALIDAD , TRATABLE
- 1-10 CASOS POR MILLON DE PERSONAS AL AÑO
- INCIDENCIA EN EMBARAZO SE CALCULA EN 1-3% (HELLP) ….REALMENTE DESCONOCIDA

Deepak Joshi, Andra James, Alberto Quaglia, Rachel H Westbrook, Michael A Heneghan
LANCET 2010 ; 375 594-605

- LA MORTALIDAD MATERNA REPORTADA DE LA FALLA HEPATICA FULMINANTE ASOCIADA A EMBARAZO ES DE 25%-75%
- MORTALIDAD PERINATAL RANGO AMPLIO 10%-90%

- **IDENTIFICACIÓN Y DERIVACIÓN PRECOZ A CENTROS DE ALTA COMPLEJIDAD QUE OFREZCAN ALTERNATIVAS TERAPEUTICAS**

Yavuz Simsek[1] *Obstet. Gynaecol. Res. Vol. 38, No. 4: 745–748, April 2012*
Fulminant hepatitis A infection in second trimester of pregnancy requiring living-donor liver transplantation

FISIOLOGIA HEPATICA Y EMBARAZO

- AUMENTO FRECUENCIA CARDIACA , GASTO CARDIACO Y CAIDA EN RESISTENCIA VASULAR SISTEMICA
- AUMENTO 50% DEL VOLUMEN SANGUINEO
- VOLUMEN DE PERFUSIÓN HEPATICO PERMANECE CONSTANTE
- AUMENTO DE FACTORES DE COAGULACIÓN Y CERULOPLASMINA
- NIVELES DE ALBUMINA DISMINUYEN LEVEMENTE POR HEMODILUCION , TRANSAMINASAS PERMANECES CONSTANTES , NO HAY CAMBIOS EN ARQUITECTURA

Deepak Joshi, Andra James, Alberto Quaglia, Rachel H Westbrook, Michael A Heneghan
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	Alteration from non-pregnant state
Haemoglobin (118–148 g/L)	↓ from second trimester
White cell count (3·9–11·1×10⁹/L)	↑
Platelets (150–450×10⁹/L)	None
Packed cell volume (0·36–0·44 L/L)	↓
Prothrombin time (10–12 s)	None
Alkaline phosphatase (42–128 IU/L)	↑ (bone and placenta)
Albumin (35–50 g/L)	↓
ALT (0–70 IU/L)	None
GGT (2–35 IU/L)	None
Bilirubin (0–17 µmol/L)	None
Alpha-fetoprotein (0–44 µg/L)	↑
Cholesterol (3·5–5 mmol/L)	↑
Uric acid (160–395 µmol/L)	↓

↑=increase. ↓=decrease. ALT=alanine aminotransferase. GGT=gamma-glutamyl transpeptidase.

Table 1: **Biochemical changes during normal pregnancy**

Deepak Joshi, Andra James, Alberto Quaglia, Rachel H Westbrook, Michael A Heneghan
LANCET 2010 ; 375 594-605

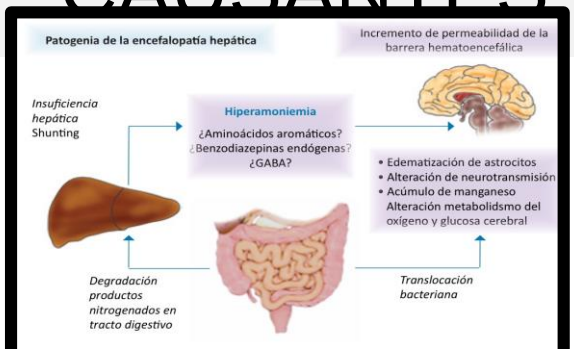
FISIOPATOLOGIA DE LA FALLA HEPÁTICA AGUDA

- ENCEFALOPATIA
- CARDIOVASCULAR
- PULMONAR
- RENAL
- HEMATOLÓGICO

R.H. Steadman / Anesthesiology Clin N Am 22 (2004) 687–711

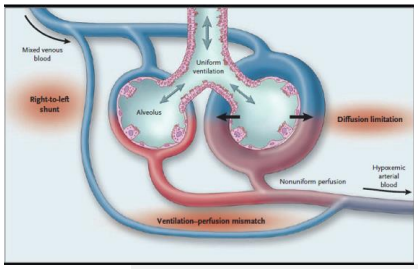
ENCEFALOPATÍA

- PRESENTE EN 80% DE LOS CASOS
- SUSTENTO EN AUMENTO DE LA PRESION INTRACRANEANA , LO QUE DISTINGUE DE LA ENECEFALOPATIA EN DAÑO CRÓNICO
- MAYOR PROBABILIDAD DE HERNIACIÓN Y ENCLAVAMIENTO CAUSANTES DE MORTALIDAD



R.H. Steadman / Anesthesiology Clin N Am 22 (2004) 687–711

CARDIOVASCULAR PULMONAR



- ESTADO HIPERDINAMICO CARACTERIZADO POR AUMENTO DEL GASTO CARDIACO Y VASODILATACION ARTERIOLAR
- IMPORTANTE DETERMINAR PRESENCIA DE ENFERMEDAD CORONARIA PRETRASPLANTE (MOT:50% MORB 80%)
- SINDROME HEPATOPULMONAR , EN FALLA AGUDA SOBRE CRONICA

R.H. Steadman / Anesthesiology Clin N Am 22 (2004) 687–711

RENAL HEMATOLÓGICO

- FALLA RENAL :
  - ETIOLOGIA MULTIFACTORIAL , SE PRESENTA EN EL 30% DE LOS PACIENTES CON ENCEFALOPATIA AVANZADA
  - MEDICION DE CREATININA Y DIURESIS
- COAGULOPATIA:
  - PROLONGACION DEL TIEMPO DE PROTROMBINA , DISMINUCION DE FACTORES I,II VII, IX Y X
  - FACTOR V MEJOR MARCADOR POR VIDA MEDIA Y NO AFECTACION POR TRANSFUSIONES DE HEMODERIVADOS
  - PLAQUETOPENIA

R.H. Steadman / Anesthesiology Clin N Am 22 (2004) 687–711

Panel 1: **Classification of liver diseases in pregnancy**

Pregnancy-related liver diseases

- Hyperemesis gravidarum
- Intrahepatic cholestasis of pregnancy
- Pre-eclampsia and eclampsia
- HELLP syndrome
- Acute fatty liver of pregnancy

Pregnancy-unrelated liver diseases

Pre-existing liver diseases

- Cirrhosis and portal hypertension
- Hepatitis B and C
- Autoimmune liver disease
- Wilson's disease

Liver diseases co-incident with pregnancy

- Viral hepatitis
- Biliary disease
- Budd-Chiari syndrome
- Liver transplantation
- Drug-induced hepatotoxicity

HELLP=haemolysis, elevated liver enzymes, and low platelets.

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FALLA HEPATICA AGUDA

RELACIONADA CON EMBARAZO

- PREECLAMPSIA Y SD HELLP
- HIGADO GRASO AGUDO DEL EMBARAZO

NO RELACIONADA CON EMBARAZO

- HEPATITIS VIRAL
- HEPATITIS AUTOINMUNE
- FARMACOS
- CRIPTOGENICO

PREECLAMPSIA Y SD HELLP

HELLP completo	
LDH	> 600 U/l
Plaquetas	< 100.000
GOT	> 70 U/l
HELLP incompleto	
Sólo una o dos de los mencionados previamente	

1% de los embarazos , 20% de las preeclampsias con criterio de severidad

- 2/3 anteparto, 1/3 postparto, caracteristico de tercer trimestre factores de riesgo comunes a PE

Desarrollo anormal de la placenta con disfunción endotelial

- Activacion del complemento cascada de la coagulacion injuria vascular y depósitos de fibrina ,
- Vasocontricción , agregacion plaquetaria y necrosis hepatica : EPIGASTRALGIA NAUSEAS, VOMITOS , 15-20 % EN AUSENCIA DE HIPERTENSION

RIESGO DE MUERTE MATERNA 1% , ROTURA HEMATOMA HEPATICO, HEMATOMA HEPÁTICO 1%

TERCER TRIMESTRE Y PUERPERIO
ROTURA HEMATOMA HEPATICO

Daño hepático agudo grave en el embarazo - A. Sepulveda-Martinez et al

Rev Med Chile 2015; 143: 627-636

HIGADO GRASO AGUDO DEL EMBARAZO

INFILTRACION AGUDA GRASA MICROVESICULAR DE LOS HEPATOCITOS

1/7000 A 16000 EMBARAZOS

- ALTA MORTALIDAD MATERNA QUE HA MEJORADO CON AVANCES EN CUIDADOS DE UCI (1%-8%) Y FETAL DE 20%
- EDAD GESTACIONAL MEDIA DE PRESENTACIÓN 36 SEMANAS , 60% INTERRUPCIÓN DENTRO DE 24 HORAS ,TASA DE CESÁREA DE 74%
- POSTERIOR AL PARTO PUEDE DESARROLLAR FALLA HEPATICA COLESTÁSICA PROLONGADA QUE REQUIERE TRASPLANTE

PRESENTACION CLINICA VARIADA , DESDE NAUSEAS Y VÓMITOS HASTA ICTERICIA CON ENCEFALOPATIA

- CRITERIOS DE SWANSEA ALTERNATIVA A BIOPSIA HEPÁTICA COMO DIAGNÓSTICO

Deepak Joshi, Andra James, Alberto Quaglia, Rachel H Westbrook, Michael A Heneghan
LANCET 2010 ; 375 594-605

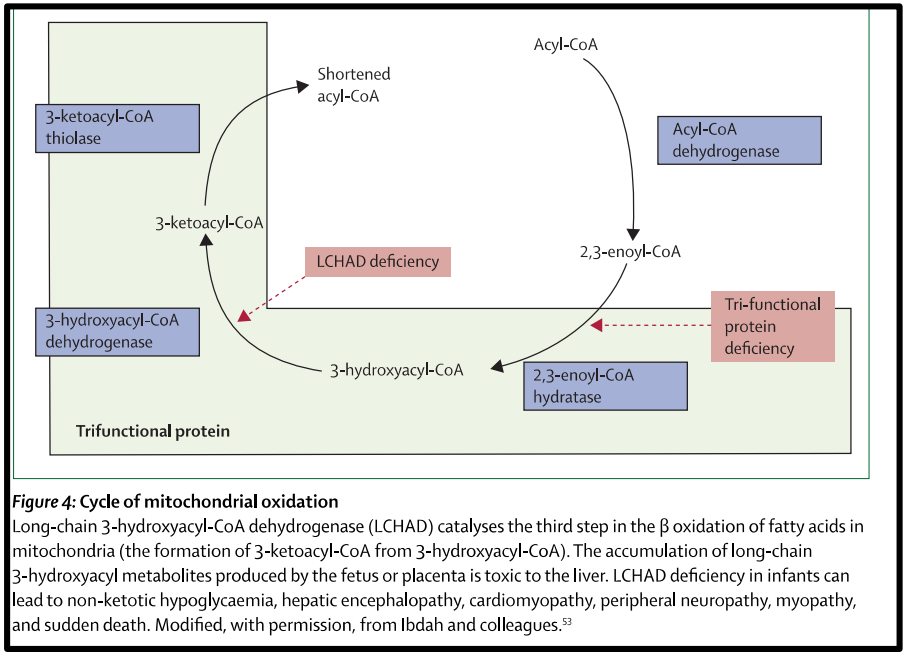
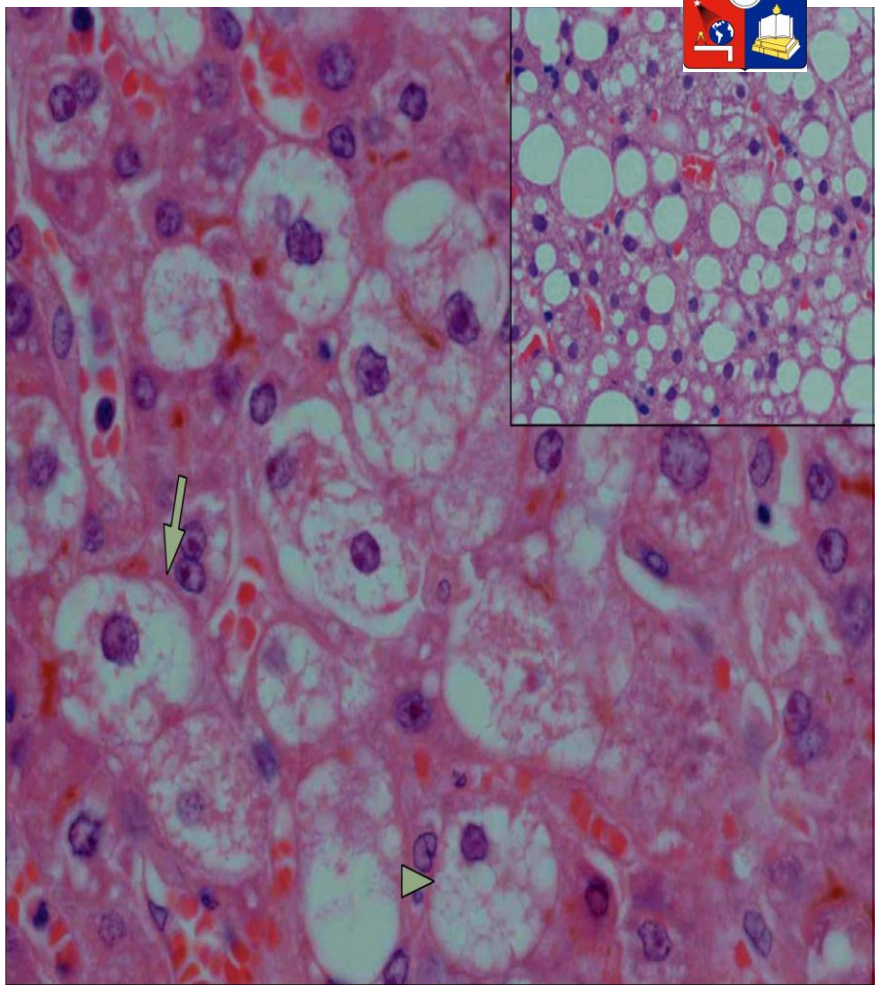


Figure 4: **Cycle of mitochondrial oxidation**
Long-chain 3-hydroxyacyl-CoA dehydrogenase (LCHAD) catalyses the third step in the β oxidation of fatty acids in mitochondria (the formation of 3-ketoacyl-CoA from 3-hydroxyacyl-CoA). The accumulation of long-chain 3-hydroxyacyl metabolites produced by the fetus or placenta is toxic to the liver. LCHAD deficiency in infants can lead to non-ketotic hypoglycaemia, hepatic encephalopathy, cardiomyopathy, peripheral neuropathy, myopathy, and sudden death. Modified, with permission, from Ibdah and colleagues.[53]



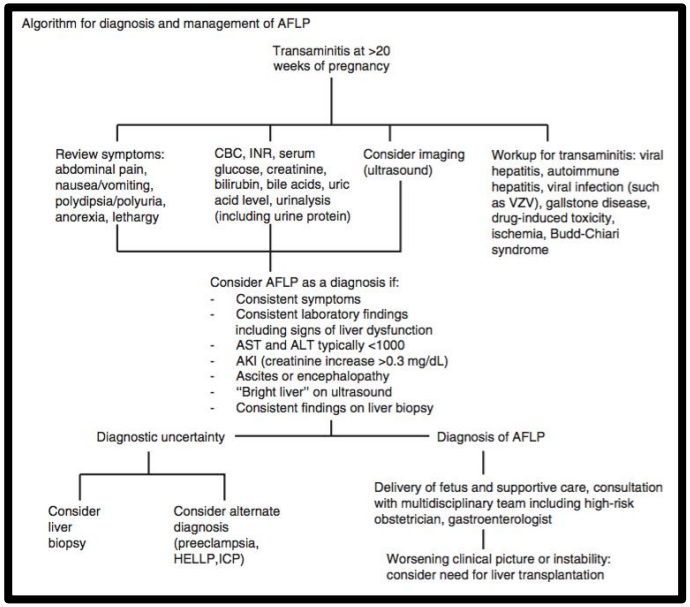
Panel 3: Swansea diagnostic criteria for diagnosis of acute fatty liver of pregnancy[1]

Six or more of the following features in the absence of another explanation

- Vomiting
- Abdominal pain
- Polydipsia/polyuria
- Encephalopathy
- High bilirubin (>14 µmol/L)
- Hypoglycaemia (<4 mmol/L)
- High uric acid (>340 µmol/L)
- Leucocytosis (>11×10^6/L)
- Ascites or bright liver on ultrasound scan
- High AST/ALT (>42 IU/L)
- High ammonia (>47 µmol/L)
- Renal impairment (creatinine >150 µmol/L)
- Coagulopathy (PT >14 s or APTT >34 s)
- Microvesicular steatosis on liver biopsy

ALT=Alanine aminotransferase. AST=aspartate aminotransferase. PT=prothrombin time. APTT=activated partial thromboplastin time.

SENSIBILIDAD 100%
ESPECIFICIDAD 57%
VPP 85%
VPN100%



Joy Liu, Tara Ghaziani, Jacqueline Wolf. Acute Fatty Liver Disease of Pregnancy: Updates in Pathogenesis, Diagnosis, and Management. Am J Gastroenterol. March 2017

FALLA HEPATICA AGUDA VIRA

- PRESENTACION SEVERA DE HEPATITIS AGUDA , POTENCIALMENTE REVERSIBLE CON APARICIÓN DE FALLA HEPÁTICA CON ENCEFALOPATÍA E ICTERICIA DENTRO DE LAS 8 SEMANAS DE PRESENTADA LA ENFERMEDAD
- MORTALIDAD DESCRITA 60% -75% , ASOCIACION CON EMBARAZO 0,1%
- CASOS MAS SEVEROS ASOCIADOS A VIRUS E, NO REPORTADOS EN CHILE
- EN TERCER TRIMESTRE SE DEBE INTERRUMPIR EMBARAZO DADO QUE EL TRASPLANTE HEPÁTICO CON CON FETO IN SITU REPORTA SOBREVIDA FETAL 27%

Daño hepático agudo grave en el embarazo - A. Sepulveda-Martinez et al

Rev Med Chile 2015; 143: 627-636

Table 1
Clinical features and laboratory findings in common underlying conditions of acute liver failure during pregnancy

	HELLP	AFLP	Viral Hepatitis
Risk factors	Prior pregnancy with HELLP Multiple gestation Extremes of age	Primigravida Multiple gestation Male fetus	Same as nonpregnant (blood, fecal/oral transmission depending on type)
Typical gestational age of onset	>20 wk	>24 wk	Any, evenly distributed through trimesters
Prior/family history?			
Typical clinical features	Hemolysis Thrombocytopenia Elevated liver function tests With/without hypertension With/without proteinuria DIC and liver failure (rare)	Liver failure Coagulopathy Encephalopathy Hyperammonemia Hypoglycemia DIC Jaundice	Liver failure Coagulopathy Encephalopathy DIC — — —
Diagnosis			
AST/ALT levels	Mild, up to 20× normal	300–500 IU/L but may vary	>1000 IU/L
Bilirubin	<5 mg/dL	<5 mg/dL but may be higher	Variable
Imaging	Normal in most, infarcts, hematomas, capsular rupture (rare)	Fatty infiltration	Normal
Outcomes			
Maternal mortality	1%	7%–18%	41%–54% (hepatitis E)
Fetal/perinatal mortality	11% (gestational age dependent)	9%–23% (gestational age dependent)	69% (hepatitis E) 39% (HSV)
Recurrence	25%, aspirin therapy starting at 16 wk may decrease risk	High if LCHAD deficiency, otherwise rare	None

Abbreviations: ALT, alanine aminotransferase; AST, aspartate aminotransferase; DIC, disseminated intravascular coagulation; HELLP, hemolysis/elevated liver enzymes/low platelet syndrome; HSV, herpes simplex virus; LCHAD, long-chain 3-hydroxyacyl coenzyme A dehydrogenase.

Adapted from Shams M. Update in liver diseases with pregnancy. Gastroenterology and Hepatology Research 2013;2(2):393.

FALLA HEPATICA INMUNOLÓGICO

- HEPATITIS AUTOINMUNE SE PRESENTA EN MUJERES EN EDAD FÉRTIL
- LA EXACERVACIÓN SE PRESENTA HABITUALMENTE EN LOS TRES MESES POST PARTO
- EN GENERAL RESPONDE A TERAPIA MÉDICA CON AUMENTO DE INMUNOSUPRESORES, NO DEBEN SUSPENDERSE DURANTE EL EMBARAZO

ESTABLECIDO EL DIAGNOSTICO DE FALLA HEPATICA FULMINANTE Y EMBARAZO

- TRASLADO A CENTRO DE ALTA COMPLEJIDAD PARA MANEJO MULTIDISCIPLINARIO
- DETERMINAR BENEFICIO DE LA INTERRUPCION EN RELACIÓN A ETIOLOGIA Y EDAD GESTACIONAL
- REQUIERE TRANSPLANTE HEPÁTICO ?

GUIAS CLINICAS SOCIEDAD CHILENA DE TRASPLANTE

- **EL OBJETIVO PRINCIPAL DEL TRASPLANTE HEPATICO ES PROLONGAR LA VIDA DE LOS PACIENTES AFECTADOS LOGRANDO UNA BUENA CALIDAD DE VIDA POSTERIOR AL TRASPLANTE**
- **ES UNA CIRUGIA DE ALTO RIESGO QUIRURGICO, CON UN ELEVADO COSTO ECONÓMICO Y QUE SOMETE A LAS PACIENTES A INMUNOSUPRESION DE POR VIDA**

- TECNICA DESCRITA EN 1963 POR THOMAS STARZL
- SOBREVIDA A MEJORADO CON LA TÉCNICA QUIRÚRGICA , SOPORTE INTENSIVO E INMUNOSUPRESORES
- 15.000 TRASPLANTES HEPATICOS AL AÑO
- SOBREVIDA A 1 Y 5 AÑOS DE 80% Y 90%
- EN CHILE SE REALIZAN 74 TRASPLANTES HEPATICOS ANUALMENTE
- TASA DONANTES 7/MILLON

GUIAS CLINICAS SOCIEDAD CHILENA DE TRASPLANTE

- LAS ETIOLOGIAS MAS FRECUENTES EN ADULTOS SON CIRROSIS POR VIRUS C, OH Y FALLA HEPÁTICA FULMINANTE
- LISTA ESPERA 200 PACIENTES , CON MORTALIDAD PRETRASPLANTE EN CRÓNICOS DE 25% A 29% Y DE 37% EN FALLA FULMINANTE

GUIAS CLINICAS SOCIEDAD CHILENA DE TRASPLANTE

CRITERIOS DE INCLUSION EN LISTA DE ESPERA

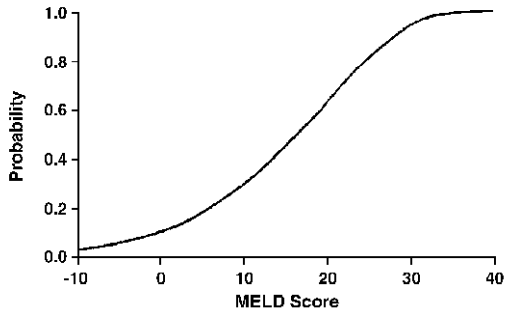


Fig. 1. Relationship between MELD score and 3-month mortality in patients with cirrhotic liver disease. (From Wiesner RH, McDiarmid SV, Kamath PS, Edwards EB, Malinchoc M, Kremers WK, et al. MELD and PELD: application of survival models to liver allocation. Liver Transpl 2001;7(7):567–80 (p. 578); with permission.)

Puntaje MELD = (0,957 x log creatinina (mg/dl) + 0,378 x log bilirrubina total (mg/dl) + 1,120 x log INR + 0,643.

La insuficiencia hepática fulminante, fallo primario de injerto y trombosis de la arteria hepática dentro de los 3 meses post-trasplante y el paciente cirrótico en situación de "agudo sobre crónico" con MELD ≥ 28 siempre serán indicaciones de urgencia. La insuficiencia hepática fulminante siempre tendrá prioridad sobre las demás.

GUIAS CLINICAS SOCIEDAD CHILENA DE TRASPLANTE

FALLA HEPÁTICA FULMINANTE ES PRIORITARIA

Tabla 2. Indicación de trasplante en falla hepatica fulminante: criterios de King`s College

- POR PARACETAMOL
  - PH < de 7.3 (independiente del grado de encefalopatía)
  - INR > de 6.5 y creatinina en plasma > de 3.4 mg/dl si están en encefalopatía III-IV.
- DE CAUSA DISTINTA AL PARACETAMOL
  - INR > de 6.5
  - Tres o más de los siguientes criterios
    1. Etiología: NoANoB, indeterminada, halotano o por reacción idiosincrásica a fármacos
    2. Edad: < de 10 o > 40 años
    3. Intervalo entre inicio de ictericia y aparición de encefalopatía mayor de 7 días
    4. INR > 3.5
    5. Bilirrubina plasmática > 17.6 mg/dl

EN CHILE :
INSTITUTO DE SALUD PUBLICA Y CORPORACIÓN DE TRASPLANTE SON RESPONSABLES DE LA LISTA DE ESPERA
CASOS ESPECIALES : REUNION DE COMITÉ CON RESPUESTA EN 48 HORAS

GUIAS CLINICAS SOCIEDAD CHILENA DE TRASPLANTE

FARMACOS Y SU INFLUENCIA EN EMBARAZO

	Side-effects	FDA category
Azathioprine	Lymphopenia, hypogammaglobulinaemia, thymic hypoplasia	D
Ciclosporin A	Premature labour, low birthweight, neonatal hyperkalaemia, renal dysfunction	C
Mycophenalate mofetil	First trimester loss, microtia. Increased risk of congenital malformations	D
Prednisolone	Cleft palate, intrauterine growth retardation, premature rupture of membranes, fetal adrenal hypoplasia	C
Tacrolimus	Similar side-effects to ciclosporin. Neonatal malformation rates of 4%	C

FDA=US Food and Drug Administration. Pregnancy category C: animal reproduction studies have shown an adverse effect on the fetus, but no adequate and well controlled studies in human beings exist. Potential benefits might warrant use of the drug in pregnant women despite potential risks. Pregnancy category D: positive evidence of human fetal risk based on adverse reaction data from investigational or marketing experience or studies in human beings. However, potential benefits might warrant use of the drug in pregnant women despite potential risks.

Table 3: **Common side-effects of immunosuppressants**

EVALUAR RIESGO
BENEFICIO
SE DEBE
SUSPENDER
MICOFENOLATO

Deepak Joshi, Andra James, Alberto Quaglia, Rachel H Westbrook, Michael A Heneghan
LANCET 2010 ; 375 594-605

¿QUE OCURRE CON LAS TRASPLANTADAS QUE SE EMBARAZAN ?

Clinical Gastroenterology and Hepatology 2019;■:■–■

Outcomes of Pregnancy in Recipients of Liver Transplants

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BACKGROUND & AIMS: Despite increasing reports of pregnancy in women who received liver transplants, it is not clear how transplantation and immunosuppression affect pregnancy. We collected data from liver transplant recipients who became pregnant on immunosuppression regimens, pregnancy management, graft morbidity, and outcomes of mothers and neonates.

METHODS: We searched the liver transplant database in Birmingham, United Kingdom, for women who reported pregnancy after liver transplantation from August 1986 through May 2016. We collected information on morbidities and outcomes of 139 pregnancies in 83 women (median age at conception, 27 y; range, 15–46 y). Fisher exact tests were used to compare categoric variables and Mann–Whitney *U* and Kruskal–Wallis tests were used to compare continuous variables. The primary outcome was the live birth rate in the entire cohort. Additional outcomes analyzed included differences in immunotherapy regimens, and outcomes associated with exposure to cyclosporine and tacrolimus, time to transplantation (<12 vs >12 mo), and time period of pregnancy (1986–2000 vs 2001–2016).

RESULTS: Of the pregnancies, 69% resulted in live births, 19% resulted in miscarriages or still births, and 9% were terminated. A higher proportion of patients who conceived more than 1 year after liver transplantation had live births than of women who conceived before this time (98% vs 80%; $P = .006$). Tacrolimus exposure was associated with higher risks of premature delivery ($P = .045$) and caesarian section ($P = .031$) than cyclosporine exposure. Compared with the period from 1986 to 2000, women who conceived from 2001 to 2016 had a significantly shorter time between transplantation and conception (median, 3 vs 7 y; $P = .027$), frequent use of tacrolimus vs cyclosporine (84% vs 26%; $P = .001$), and a higher incidence of cesarean section (44% vs 32%; $P = .025$).

CONCLUSIONS: Almost 70% of women who conceive after liver transplantation have live births, although this rate is lower than that of women in the overall population. These cases require involvement of hepatologists and obstetricians.

PERIODO DE 1 AÑO POSTERIOR AL TRANSPLANTE
AUMENTO DE RIESGO MATERNO DE PREECLAMPSIA Y DIABETES GESTACIONAL
MAYOR TASA DE CESAREAS
MANTENER INMUNOSUPRESION

Liver International 2006: 26: 494–497

Liver International
DOI: 10.1111/j.1478-3231.2006.01246.x

Case Report

Successful liver transplantation and delivery in a woman with fulminant hepatic failure occurring during the second trimester of pregnancy

Jarufe N, Soza A, Pérez-Ayuso RM, Poblete JA, González R, Guajardo M, Hernandez V, Riquelme A, Arrese M, Martínez J. Successful liver transplantation and delivery in a woman with fulminant hepatic failure occurring during the second trimester of pregnancy.
Liver International 2006: 26: 494–497 r Blackwell Munksgaard 2006

Abstract: Background: Severe liver dysfunction occurring during pregnancy is an unusual but dramatic event that poses special technical and ethical issues because it involves two lives. Methods and Results: We report the case of a 35-year-old woman with cryptogenic fulminant hepatic failure who underwent successful orthotopic liver transplantation at 22 weeks of pregnancy. After a relatively uneventful post-operative course she delivered a normal offspring at the 27th week of gestation. There were no obstetrical complications and neonatal outcome was excellent. After a year of follow-up, the patient is doing well,and the newborn has exhibited normal psychomotor and weight/height development. Conclusion: This case illustrates the challenge of treating fulminant hepatic failure during pregnancy and demonstrates that liver transplantation is a feasible therapeutic option for treatment of patients with this condition, allowing successful completion of pregnancy.

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Keywords: acute liver failure – high-risk pregnancy – liver transplantation

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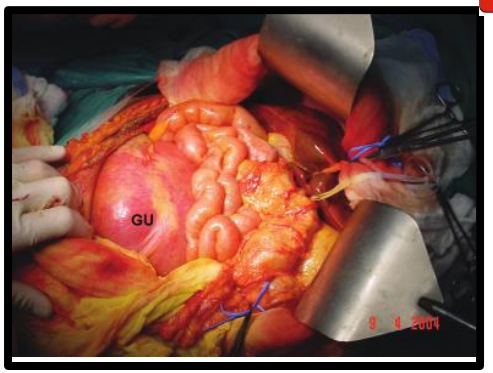

Falla hepatica fulminante criptogénica que se incició a las 15 semanas
Tx a las 22 semanas , donante cadáver
Buena evolucion post op , manejo anastomosis via biliar
Inmunosupresion con metilprednisolona mas tacrolimus
Parto a las 27 semanas
Buen seguimiento al año madre e hijo

ANNALS of Hepatology

CASE REPORT

March-April, Vol. 13 No. 2, 2014: 288-292

Successful orthotopic liver transplantation and delayed delivery of a healthy newborn in a woman with fulminant hepatic failure during the second trimester of pregnancy

Manuel Mendizabal,*,• Carlos Rowe,†,• Federico Piñero,* Ariel Gonzalez-Campaña,†
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ABSTRACT

Severe liver dysfunction during pregnancy implies a serious risk for both mother and fetus, and represents a technical and ethical challenge for treating physicians. We report a case of a previously healthy 32-year old woman who was admitted to our hospital with idiopathic fulminant hepatic failure and underwent successful orthotopic liver transplantation (OLT) at gestation week 21. Patient's and fetus' immediate postoperative course were relatively uneventful until week six after OLT, when the mother developed oligohydramnios and preeclampsia. At pregnancy week 27, after inducing baby's lung maturation, a cesarean section was performed with the delivery of an otherwise healthy girl. After 3 years of follow-up, mother and child are leading normal lives with no complications related either to pregnancy or to OLT. We describe the case of a successful emergency liver transplant in a woman during the second trimester of pregnancy, demonstrating that OLT can be a viable option to preserve the life of the mother and an otherwise unviable fetus. Intrauterine baby's growths until the attainment of a viable gestational age was feasible despite the mother's fulminant hepatic failure and liver transplant surgery.

EN GENERAL PODEMOS DECIR QUE ETIOLOGIAS MULTIPLES
BUENOS RESULTADOS MATERNOS
RESULTADOS FETALES DISIMILES

Table 1. Orthotopic liver transplantation during the second trimester of pregnancy.

Year of report	Etiology	Acute Liver failure	Weeks of gestation	Graft	Maternal outcome	Fetus outcome
1989	Drug	Yes	27	Cadaveric	Survived	Neonatal death (POD 3)
1990	Hepatitis B	Yes	22	Cadaveric	PNF, ReTx	C-Section 30 weeks, survived
1990	Hepatitis B	Yes	26	Cadaveric	PNF, ReTx	C-Section (POD10) neonatal death (POD 14).
1991	Cryptogenic	Yes	27	Cadaveric	Survived	C-section 39 weeks, survived
1993	Hepatitis B	Yes	21	Cadaveric	Survived	Fetal death 22 weeks
1994	Cryptogenic	Yes	17	Cadaveric	Survived	Fetal death 26 or 28.5 w?
1995	Cryptogenic	Yes	26	LR, Left lobe	Survived	Spontaneous abortion (POD 2)
1995	Autoimmune hepatitis	No	20	Cadaveric	Survived	C-section 28 weeks, survived
1997	Autoimmune hepatitis	No	23	Cadaveric	Survived	Neonatal death (POD 0)
1997	Cryptogenic	Yes	13	LR, Left lobe	Survived	Spontaneous abortion (POD 0)
2002	Cryptogenic	Yes	18	LR, Right lobe	Survived	Artificial abortion (POD 30)
2006	Cryptogenic	Yes	22	Cadaveric	Survived	Vaginal Delivery, 27 weeks
2007	Familial biliary cirrhosis	No	13	Cadaveric	Survived	Vaginal delivery 36 weeks
2008	Cryptogenic	Yes	19	Cadaveric	Survived	Spontaneous abortion (POD 1)
2012	Hepatitis A	Yes	18	LR, Right lobe	Survived	Artificial abortion 20 weeks
Present case	Cryptogenic	Yes	21	Cadaveric	Survived	C-section 27 weeks, survived

POD: postoperative day. PNF: primary non-function. ReTx: retransplantation. C-section: cesarean section. LR: living related.

- La insuficiencia hepatica aguda es un cuadro poco frecuente , pero de alta morbimortalidad materna y fetal en el embarazo
- Las etiologias pueden ser múltiples , destacando las causas asociadas a embarazo
- En los casos de viabilidad fetal la conducta debe ser interrupcion y manejo intensivo con unidad de Trasplante
- Previabilidad el manejo en UCI y Trasplante es una indicacion
- El trasplante intraembrazo es una alternativa valida reportada en casos aislados en el mundo por su baja frecuencia , por lo que los grupos no son comparables para tomar decisiones y establecer normas, debe ser una decision multidsciplinaria , caso a caso.

- El uso de inmunosupresores en el embarazo tiene una tasa de seguridad aceptable al comparar riesgo beneficio
- Las mujeres con trasplante hepático tienen una alta tasa de supervivencia a largo plazo , logran embarazo de forma comparable a la poblacion general y tiene una tasa de buen resultado perinatal superior a 70 % o mas .