



Bari, 12-15 ottobre 2011

**CLINICAL CHARACTERISTICS AND OUTCOME OF
HEART TRANSPLANT IN ADULTS WITH
CONGENITAL HEART DISEASES**

Dr Dimpna C. Albert Brotons

Paediatric Cardiac Transplantation Programme
Vall d'Hebron University Hospital. Barcelona. Spain



SOCIEDAD
ESPAÑOLA DE
CARDIOLOGÍA



Sección de Insuficiencia
Cardiaca y Trasplante

Heart Transplant for CHD

- Long-term survival in patients with CHD has improved with advances in medical and surgical therapies.
- Currently approximately 85% of children with CHD are surviving to adulthood.
- Progressive cardiopulmonary dysfunction often occurs late after palliative or corrective surgeries and it is the most common cause of death in patients with CHD.
- Consequently, a growing number of patients with complex CHD will require heart transplantation for end-stage heart failure.



Heart Transplant in Adults with CHD

- Objective:

To analyze outcome in Spanish adult transplanted population with CHD (different subgroups) and compare it with the most frequent causes of adult transplantation:

- Ischemic Heart Disease [IHD]
- Idiopathic Dilated Cardiomyopathy [IDCM]



Subanalysis Spanish Registry on Heart Transplantation (1984-2010)

Adults with CHD

Authors: Dimpna C. Albert¹ María J. Paniagua², Luis Almenar³, Vicenç Brossa⁴, Marisa G. Crespo², Javier Segovia⁵, Jesús Palomo⁶, Juan Delgado⁷, Francisco González-Vílchez⁸, Nicolás Manito⁹, Ernesto Lage¹⁰, Luis García-Guereta¹¹, José L. Rodríguez-Lambert¹².

(1) Vall d'Hebron University Hospital. Barcelona.

(2) A Coruña University Hospital. A Coruña

(3) Director of Spanish Registry on Heart Transplantation. University Hospital La Fe. Valencia.

(4) Santa Cruz-San Pablo Hospital. Barcelona.

(5) Puerta de Hierro Majadahonda Clinic. Madrid.

(6) Gregorio Marañón University Hospital. Madrid (Adults).

(7) Hospital 12 de Octubre. Madrid

(8) Marqués de Valdecilla Hospital. Santander.

(9) Bellvitge Hospital. Barcelona.

(10) Virgen del Rocío Hospital. Sevilla.

(11) La Paz University Hospital. Madrid.

(12) Asturias Central Hospital. Oviedo.



Heart Transplant in Adults with CHD

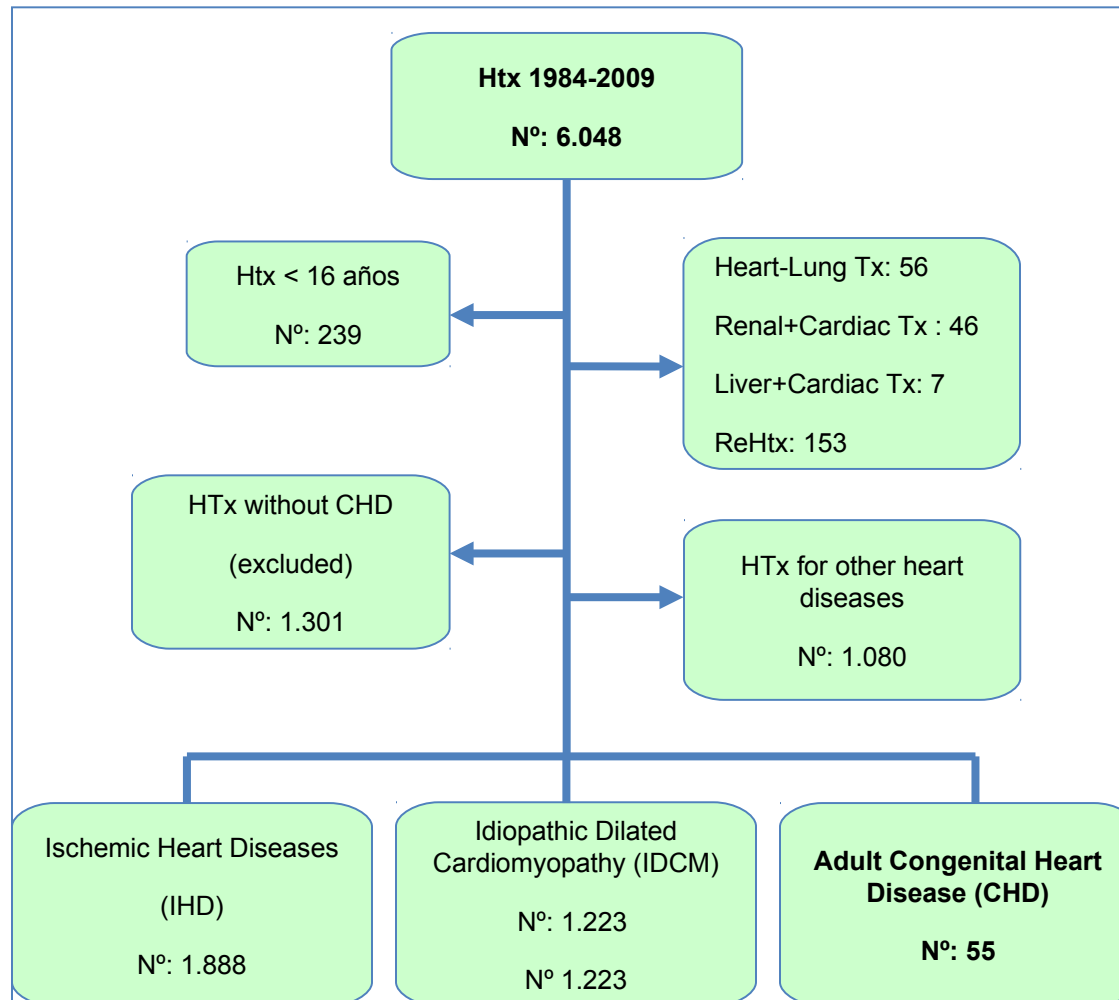
Material and Methods

- From May 1984-Dec 2009
 - Total HTx 6048 patients
 - Excluded: Pediatric transplants(<16 years), combined transplants, reHTx, HTx performed in other centers without adult CHD cases, and HTx for heart diseases other than IDCM and IHD
- Study population: 3166 patients:
 - IHD 1.888; IDCM 1223: CHD 55



Heart Transplant in Adults with CHD

Material and Methods



Heart Transplant in Adults with CHD

Material and Methods

- *Study subgroups:* CHD transplants were classified according to pathophysiology into 4 groups:
 - 1) Single ventricle with different degrees of pulmonary Stenosis (n:18)
 - 2) Single ventricle with Cavopulmonary shunt surgery (*Glenn/Fontan procedure*) (n:10)
 - 3) Congenitally corrected transposition of great arteries or DTG with atrial Switch (*Mustard/Senning surgery*) (n:10).
 - 4) CHDs with different degrees of right ventricle overload *Tetralogy of Fallot, Ebstein's disease, DTG with PS and Rastelli patch, DORV* (n:17).



Heart Transplant in Adults with CHD Results

Clinical profile of patients with Adult Heart Transplantation

	IHD	IDCM	CHD
Age (years)#	56 (11)	54 (16)	26 (25)
Male#	91	79	62
Weight (Kg)#	73 (15)	72 (17)	59 (19)
Inotropes e.v.*	34	32	16
Renal Dysfunction (Cr>2)*	13	10	7
Pulmonary Hypertension	47 (22)	46 (17)	35 (21)
Bilirrub. (>2.5 mg/dL)#	13	18	32
ALT/ AST (>100 mg/dL)	24	27	21
Diabetes#	16	10	1
Arterial Hypertension#	38	21	7
Dyslipidemia#	52	26	11
Ventricular Assistance#	17	11	9

* p<0.05

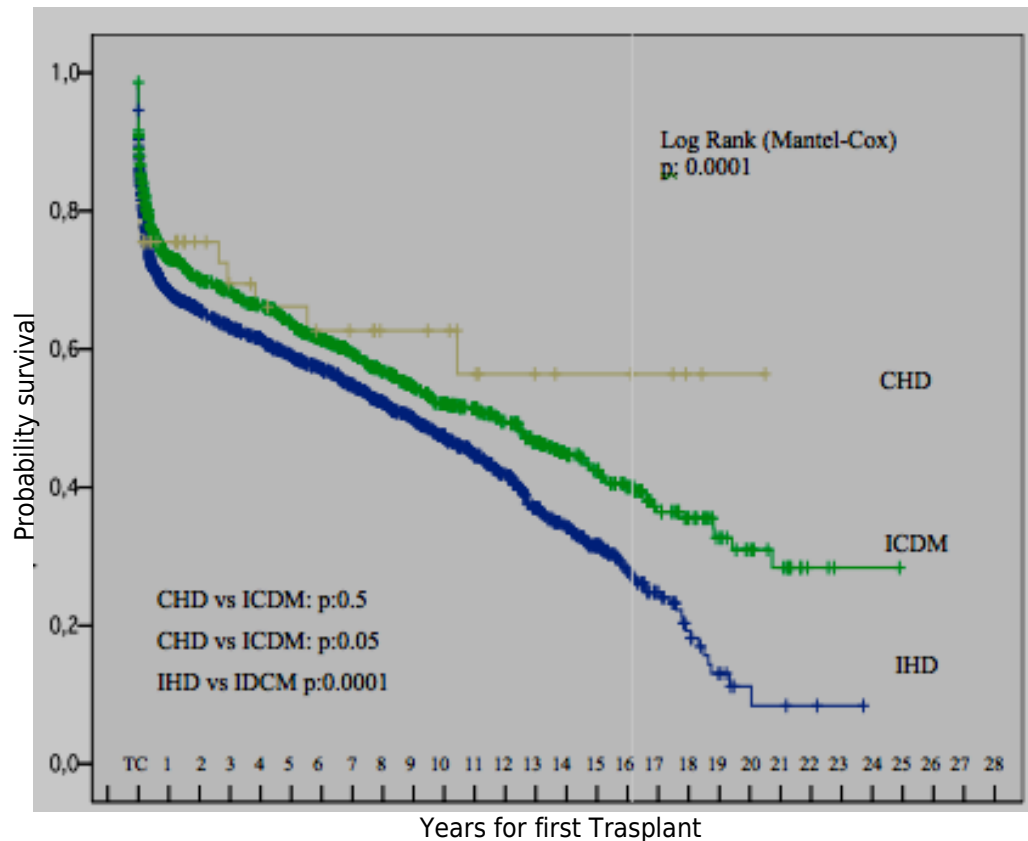
p<0.001

(Spanish Registry on Heart Transplantation: 1984-2010)

Significant differences were found between the clinical profile of patients with CHD and other groups: younger age, less need for inotropes and minor renal dysfunction, with less risk factors



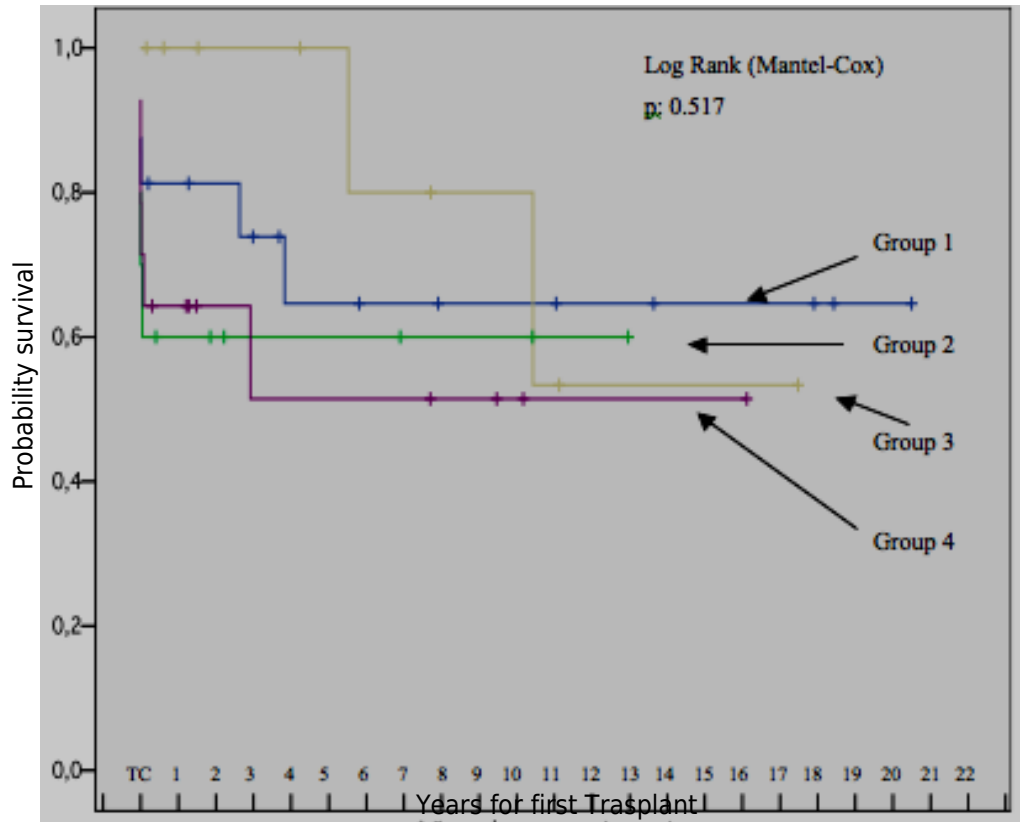
Heart Transplant in Adults with CHD Results



- The analysis of survival showed some differences among groups (CHD vs IHD, $p=0.05$; CHD vs ICDM, $p=0.5$; IHD vs ICDM, $p=0.0001$)
- The probability of overall survival was higher in CHD group, despite its high early mortality.



Heart Transplant in Adults with CHD Results



Group 1: Single ventricle + PS
Group 2: SV + Glenn/ Fontan surgery
Group 3: RV systemic (CTGA/ Senning)
Group 4: CHDs overload RV

Study Subgroups

Group	Nº	Age	Male	Previous Surgery	Early Mortality
1	18	24 (8)	58	1 (2)	19
2	10	19 (10)	56	2 (3)	40
3	10	45 (39)	56	0.5 (1)	0
4	17	30 (36)	73	1 (2)	29
p		0.1	0.8	0.001	0.001

-Early mortality was different between the different CHD subgroups (group 1: 19%, group 2: 40%, group 3: 0%, group 4: 29%; $p < 0.001$)
 -No significant differences among subgroups were found in long-term survival



Heart Transplant in Adults with CHD

Summary

- Percentage of adult with CHD transplanted in Spain is low (1%).
- Long term survival is higher compared with groups with different indications for HTx (IHD and IDCM).
- Early mortality is high in operated patients with single ventricle physiology.
- European registries with a larger number of patients are needed to better define results in this group of patients.



Thank you for your attention!

Vielen Dank!

Grazie Mille!

Muchas Gracias!

