The Incidence of Solid Tumours After Heart Transplantation Has Not Declined in the Last Decade. Data from the Spanish Post-Heart Transplant Tumour Registry

M.G. Crespo-Leiro,1 M.J. Puniaquín-Martín,1 L. Almenar Bone,2 L. Alonso-Pulpón,3 F. González-Vílchez,4 J.F. Delgado-Jiménez,5 P. Diez Villanueva,6 A. López Granados,7 S. Miriáte Pérez,8 N. Manito Lorite,9 E. Lage Galle,10 B. Díaz Molina,11 G. Rábago Juan Aracil,12 F. Pérez Villa,13 T. Blasco Peiro,14 I.P. Girado Bravo,15 L. de la Fuente Galán,16 J. Muñiz García,17 Heart Transplant Unit, Hospital Universitario A Coruña, La Coruña, Spain; 2Hospital Universitari i Politècnic La Fe, Valencia, Spain; 3Hospital Universitario Puerta de Hierro, Madrid, Spain; 4Hospital Universitario Marqués de Valdecilla, Santander, Spain; 5Hospital Universitario 12 de October, Madrid, Spain; 6Hospital General Universitario Gregorio Marañón, Madrid, Spain; 7Hospital Universitario Reina Sofía, Córdoba, Spain; 8Hospital Santa Creu i Sant Pau, Barcelona, Spain; 9Hospital Universitari de Bellvitge, Barcelona, Spain; 10Hospital Universitario Virgen del Rocío, Sevilla, Spain; 11Hospital Universitario Central de Asturias, Asturias, Spain; 12Clínica Universidad de Navarra, Pamplona, Spain; 13Hospital Clínic i Provincial, Barcelona, Spain; 14Hospital Universitario Miguel Servet, Zaragoza, Spain; 15Hospital Universitario Virgen de la Arrixaca, Murcia, Spain; 16Hospital Clínico Universitario de Valladolid, Valladolid, Spain; 17Instituto Universitario de Ciencias de la Salud, Universidad de A Coruña, La Coruña, Spain.

Purpose: (HE-CA) Cancer is a well-known complication after heart transplantation (HT). While hematologic cancer incidence has recently decreased among HT patients compared to previous periods, decrease most likely associated with changes in immunosuppressive and antiviral regimens and other improvements, there is no information on what has been the recent evolution of the incidence of solid tumours in HT patients. Our aim was to assess if the incidence of solid tumours after HT has changed in the last decade.

Methods: The Spanish Post-Heart Transplant Tumour Registry (SPHTRR) collects post HT tumour data concerning all patients who have undergone HT in Spain since 1984. Two cohorts, comparable in length of follow-up, were constructed from all patients ≥ 16 years at HT and who survived 3 months after HT in this registry: one includes all patients transplanted between 1991-2000 (and followed until 31-12-2000) (n=2,311, group A) and the other includes all patients transplanted between 2001-2010 (and followed until 31-12-2010) (n=1,998, group B). 83.1% of patients were male. We compared the incidence rate of solid tumours in the two groups, being group A the reference group for all comparisons.

Results: With a total follow-up time of 8,798.6 and 9,613.4 person-years in groups A and B, 90 patients in A (10.23/1000 person-years) and 116 in B (12.07/1000 person-years) developed a first tumor of this type (relative risk=1.18 [95% C.I.=0.89-1.57]). Corresponding relative risks [95% confidence intervals] at one and five years of follow-up were 0.98 [95% C.I.=0.46-2.08] and 1.12 [95% C.I.=0.80-1.55]. During follow-up, the most frequent cancers were lung (45, 22% of all cancers), urinary bladder (26, 13%), prostate (22, 11%) and colon (12, 6%).

Conclusion: In contrast with the decrease observed in hematologic cancer incidence in recent years, there has been no such a decrease in the incidence of other type of cancers (solid tumours).

Cardiac MRI of Heart Transplant Recipients With Previous CMV Infection Demonstrates Ventricular Hypertrophy and Dysfunction

C. Butler,1 J. Freiksaits,2 R. Singh,1 M. Toma,1 R. Thompson,2 K. Chow,2 D. Kim,1 M. Hayekowsky,3 G. Pearson,1 I. Paterson,1 Mazankowski Alberta Heart Institute, Edmonton, AB, Canada; 2Division of Infectious Disease, Edmonton, AB, Canada; 3Division of Cardiology, St. Paul’s Hospital, University of British Columbia, Vancouver, BC, Canada; 4Biomedical Engineering, University of Alberta, Edmonton, AB, Canada; 5Physical Therapy, University of Alberta, Edmonton, AB, Canada.

Purpose: Cytomegalovirus (CMV) infection is common among heart transplant recipients and has adverse direct and indirect host effects. Little is known about the effects of CMV infection on cardiac allograft morphology or function. Cardiovascular MRI (CMR) is the gold standard for assessment of cardiac morphology and function. We hypothesized that history of CMV infection would be associated with myocardial scar, adverse ventricular remodeling, and reduced function.

Methods: We retrospectively ascertained the pre-transplant and donor CMV serology and post-transplant CMV infection (documented by CMV DNAemia) of heart transplant recipients who had undergone CMR as part of a separate research protocol. At our institution CMV surveillance is performed as part of a standardized post-transplant protocol and data were retrieved up to the time of their CMR scan. CMR variables of cardiac morphology and function were compared between recipients with and without previous CMV infection and across donor-recipient pre-transplant serology groups.

Results: Forty six participants (mean age 51 +/- 15 yrs, 74% male, mean time since transplantation 3.7 +/- 4.4 years) were analyzed, of whom eighteen (39%) had >= 1 documented CMV infection. Previous CMV infection was associated with increased left ventricular (LV) mass (176 vs 143 g, p = 0.006), LV wall thickness (11 vs 9 mm, p = 0.002), LV mass to volume ratio (1.2 vs 1.0, p = 0.01), and reduced diastolic function (E/E’ ratio 10 vs 7, p = 0.04). A greater number of CMV infections was associated with reduced right ventricular ejection fraction (RVEF) (r = -0.52, p = 0.03) and larger right ventricular end diastolic volume (r = 0.48, p = 0.05). Higher peak CMV DNAemia was also associated with reduced RVEF (r = -0.49, p = 0.04). There was no association between CMV infection and myocardial scarring. There were no significant differences in cardiac morphology across pre-transplant donor and recipient CMR sero-status groups.

Conclusion: Heart transplant recipients with post-transplant CMV infection demonstrate morphologic and functional allograft changes on CMR. CMR may be helpful in characterizing the indirect effects of CMV infection on cardiac allografts.