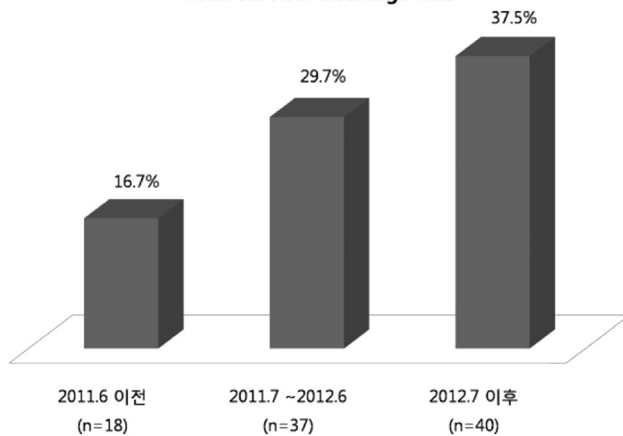


Baseline characteristics of patients with V-A and V-V ECMO

	V-A ECMO (n=59)	V-V ECMO (n=36)
Age	58.7±13.6	61.0±13.3
Male	30 (50.8%)	21 (58.3%)
Height(cm)	161.7±8.4	158.0±22.2
Bodyweight(Kg)	62.7±13.0	63.9±19.9
Hospital days	35.3±43.9	42.4±40.9
ICU days	9.3±10.6	22.6±17.8
ECMO duration(hr)	86.2±117.1	261.4±197.6
ECMO indication		
ARDS	5 (8.5%)	23 (63.9%)
Cardiogenic shock	26 (44.1%)	0 (0%)
Myocarditis	5 (8.5%)	0 (0%)
Post operative	9 (15.3%)	7 (19.4%)
Pulmonary thromboembolism	4 (6.8%)	0 (0%)
Trauma	2 (3.4%)	1 (2.8%)
Other	8 (13.6%)	5 (13.9%)
Successful weaning	20 (33.9%)	17 (47.2%)
Survival discharge	18 (30.5%)	11 (30.6%)

Total survival discharge rate



## 875

## Analysis of Perception of Own Body and Attitudes Towards Organ Donation Within Polish and Turkish Society

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**Purpose:** One of the main problem in the world is lack of deceased donors comparing to number of patients waiting for a transplantation. The family member refusal rate for a donation is very high. For this reason, the main objective of this research identified the opinions and knowledge of Polish and Turkish society about transplantation and analysis of psychological variables associated with attitudes toward transplantation.

Questions of study:

1. Are there statistically significant differences in attitudes towards transplantation of organs between Poles and Turks?
2. Is there a correlation between the level of knowledge about transplantation and presented attitudes in researched groups (Poles and Turks)?
3. Is there a statistically significant relationship between the perception of own body and attitudes towards transplantation?
4. Is there a link between taking care of own body and attitudes about transplantation in different groups of respondents?

**Methods:** 250 people from Turkey and 250 people from Poland took part in a survey. Respondents were students between 18-25 years old. In the research questionnaire to survey attitudes toward organ transplantation and

Body Integrity Questionnaire were used. Both questionnaires were created for the research by the authors of the poster.

**Results:** The results of the statistical analysis (T-student) indicated lack of significant differences in attitudes towards organ donation and organ transplantation in examined groups (Polish and Turkish students). Analysis of the results of research (r-Spearman rank correlation) demonstrated significant correlations between the level of knowledge about organ transplantation and presented attitudes within examined groups.

Another step in statistical analyses (r-Spearman rank correlation) of the research showed no significant correlation between the perception of own body and presented attitudes towards organ donation and transplantation.

**Conclusion:** One of the most important results of the research is confirmation of the importance of knowledge regarding organ transplantation for proclaimed attitudes. The higher knowledge about transplantation the higher rate of positive attitudes. Own research results justify the further conduct of interdisciplinary research in the field of transplantation taking into account the psychological variables.

## 876

## Comparative Analysis of the Impact of Stenotic Microvasculopathy on Survival After Heart Transplantation in Two Major European Transplant Centers

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**Purpose:** Stenotic microvasculopathy has been shown to be a prognostic factor for poor long-term survival after heart transplantation (HTx). We compare histologic signs of stenotic microvasculopathy on endomyocardial biopsies (EMBs) after HTx from two major transplant centers.

**Methods:** Retrospectively, we identified consecutive EMBs of cardiac allografts taken in 2002 and 2003 in center A (n=306 EMBs from 50 patients) and center B (n=439 EMBs from 368 patients). To compare the cohorts we included EMBs from month 1 to 24 after HTx. Light microscopic evaluations were performed for stenotic microvasculopathy, defined as wall thickening (WTH) of the medial layer if the ratio of luminal radius to wall thickness was <3 and as endothelial swelling (ES) if the thin layer diameter was larger than that of the endothelial cell cores. Statistical analysis used SPSS (Kaplan-Meier and Cox proportional hazards).

**Results:** 66 cases of center A (n=157 EMBs) showed ES with a mean for survival of 312 (+/-14.4) months compared to normal vessels: 326 months (+/-21.2; log rank p=0.219). 51 cases of center B (n=110 EMBs) showed ES with a mean for survival of 287 months (+/-21.1) compared to normal vessels: 321 months (+/-18.0; log rank p=0.210). WTH was revealed in 58 center A cases, with a mean for survival of 309 (+/-11.4) months compared to normal medial layers: 326 months (+/-15.9; log rank p=0.373). WTH was found in 83 center B cases, with a mean for survival of 314 (+/-15.7 months) compared to normal medial layers: 274 months (+/-30.0; log rank p=0.333). Evaluation of ES as a risk factor for overall survival generated similar data in center A (hazard rate 1.39 [95% CI, 0.78 to 2.45]; p=0.26) and B (hazard rate 1.77 [95% CI, 0.95 to 3.27]; p=0.069). Risk factor comparison for WTH and overall survival between the two centers revealed inconclusive data: center A (hazard rate 1.25 [95% CI, 0.70 to 2.23]; p=0.44) and center B (hazard rate 0.55 [95% CI, 0.28 to 1.09]; p=0.89).

**Conclusion:** In both centers, EMBs with pathological endothelial swelling as a feature of stenotic microvasculopathy show a trend towards poor long-term survival. Conflicting results of stenotic wall thickening were not significant and may be due to different pathogenetic mechanisms such as graft vasculopathy, congestive heart failure or differing structures of patient cohorts and biopsy regimens.

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## Both Recipient and Donor Cells Are Involved in Human Cardiac Allograft Vasculopathy

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**Purpose:** Cardiac allograft vasculopathy (CAV) is one of the main causes of late stage heart failure after heart transplantation and characterized by concentric intimal thickening. The role of the recipient allogeneic immune response or donor-derived cells in this process is not fully known. We aim to elucidate the contribution of donor and recipient cells in the vessel layers of CAV arteries with a method never used in this context.

**Methods:** Frozen coronary arteries of 10 HTx-patients diagnosed with CAV were obtained at autopsy. Using laser microdissection the intima, media and ectopic lymphoid structures (ELS) of the arteries were obtained and DNA was isolated by direct lysis. In these samples, a set of 15 short tandem repeats (STR) was amplified using the AmpFLSTR Identifier kit followed by Genescan analysis. DNA of donor and recipient origin was used as a reference to calculate the percentage of chimerism in the different layers of the arteries.

**Results:** In all cases the percentage of recipient cells was highest in the ELS (mean 80% with a maximum of 97% in one recipient). The CAV intima contained a mean of 58% recipient cells, suggesting a majority of immune cells infiltrating the vessel wall. As expected, the media had lowest numbers of recipient cells (mean of 22%) showing that this layer was predominantly composed of (probably carry over) donor cells.

**Conclusion:** Both recipient and donor cells are present in CAV arteries. Surprisingly, even the media was partially composed of recipient cells. There seems to be a dual action of both donor and recipient. Future research should focus more on the potential synergistic interaction of donor and recipient cells in the pathogenesis of CAV.

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#### Is Pannus an Innocent Bystander in Mechanical Circulatory Support Thrombosis? Examining the Pathology of 50 Explanted Devices

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**Purpose:** Heart transplantation is the predominant treatment for advanced heart failure (HF) patients. Given the disproportionate number of patients and available organs, the use of mechanical circulatory support (MCS) continues to rise. Complications such as pump thrombosis can occur in 5% of patients within the 1st year. Pannus development within the cannula has been identified as a risk factor for thrombosis. This retrospective study aimed to determine if the development of thrombus and pannus occurs concurrently in time, and if clinical parameters predict its occurrence.

**Methods:** All patients who had a continuous-flow MCS device explanted during 2006-2013 were selected. Patient information prior to MCS implant, post-implant laboratory values, and MCS parameters upto 6 months pre-explant were noted. The presence of pannus or thrombus on internal blood contact surfaces of the device was evaluated. Student t-test and chi-square analyses were used to compare continuous and categorical variables respectively.

**Results:** Fifty patients comprise the study group, of which 14% were female, with an average age of 48.8+/-12.1 years at time of implant. Twenty-seven (55%) patients had pannus seen inside the cannula. Median post implant follow-up was longer in patients with pannus (234 days (IQR 132-474)) compared to those without pannus (38 days (IQR 21-133)). The group with pannus had a lower rate of death on support (3.7 vs 61.9%, p<0.001), a higher rate of transplant (p<0.001) and was more likely to be INTERMACS III-IV class (p=0.09). Twelve (24%) patients had thrombus on either cannulae post removal, at median post-implant follow-up of 246 days (IQR 101-544). Presence of pannus was not associated with higher risk of pump thrombosis compared to those without pannus (18.5 vs 28.6%, p=0.4). In the group with confirmed thrombus, prior history of stroke (p<0.06), pre-implant ECMO support (p<0.08) and HeartWare or Duraheart device (p<0.01) were more common. Peak LDH levels were lower in the group with thrombus (414 vs 552 IU/L, p<0.03). Ten patients with elevated LDH values had no evidence of thrombus found.

**Conclusion:** Pannus development was a time-dependent process and was not associated with MCS-related thrombosis. We urge caution when interpreting

LDH values to predict thrombus, as elevated values were seen in cases without detectable thrombus.

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#### Recurrence of Amyloid in Endomyocardial Biopsies Following Orthotopic Heart Transplantation

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**Purpose:** Orthotopic heart transplantation (OHT) is an effective treatment modality for cardiac amyloidosis. The incidence of recurrence of amyloid post OHT has not been well established. Histologic detection of amyloid can be challenging, especially when present in small amounts on H&E stained sections. The premise of our study was to analyze sequential surveillance endomyocardial biopsies (EMBs) from a cohort of patients transplanted for amyloidosis, to assess overall rate and timing of histologic amyloid recurrence, and further determine if routine use of Congo red (CR) stain enhances detection of recurrent disease in EMBs.

**Methods:** Under IRB approval, clinical and pathological records were reviewed to identify patients who underwent OHT for cardiac amyloidosis at our institution between September 2006 and April 2014. EMBs done as part of routine protocol transplant rejection surveillance were selected and the pertinent data recorded. As amyloid recurrence is considered highly unlikely in the immediate post-transplant period, only those EMBs performed beyond 6 months of OHT were utilized for the study. All H&E slides were carefully reviewed by two pathologists for deposits of recurrent amyloid. Furthermore, a CR stain was performed on each of the study EMBs and reviewed under polarization microscopy for any evidence of recurrent disease.

**Results:** Twenty-one OHT patients performed for cardiac amyloidosis were identified with a follow up longer than 6 months. Amyloid subtypes included 6 AL, 9 hereditary and 6 senile types. Eighteen patients were male, 3 female, with an age range of 53-79 (mean age 68.4 years). The duration of follow up post - OHT ranged from 8.6 to 23.3 months (mean = 11.4 m). Of a total of 225 EMBs, 50 were performed beyond 6 months of OHT; these composed the study cases. These EMBs ranged from approximately 6 months to 23.3 months post OHT (mean = 10.48 months). Careful histologic review of these EMBs showed no morphologic evidence of amyloid. Congo red showed no positive staining in any case, and polarization microscopy showed no areas of "apple-green" birefringence.

**Conclusion:** Histologic recurrence of amyloidosis in the cardiac graft following OHT does not occur in the first year post transplant. Furthermore, Congo red stain is not useful in detecting amyloid deposits not seen by H&E staining.

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#### Incidental Primary Malignant Neoplasms in Explanted Lungs at Transplantation

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**Purpose:** Primary malignant neoplasms incidentally detected in explanted lungs at the time of transplantation are rare. The aim of this study was to assess the frequency of such undetected primary malignant neoplasms in explanted lungs with concurrent clinical and radiologic correlation.

**Methods:** Consecutive lung transplants from 2004 to 2014 were reviewed from the institutional pathology database. Data collected included age, gender, pathology of explanted lung. In cases where an incidental malignancy was detected in the explanted lung, the following parameters were abstracted: history of smoking, radiologic findings, pathology of tumor and its staging.

**Results:** A total of 216 patients (104 females, 112 males) underwent lung transplantation for the following diagnoses: emphysema (n=84); interstitial lung disease (n=69); cystic fibrosis (n=17); bronchiectasis (n=13); sarcoidosis (n=12); primary pulmonary hypertension (n=6); lymphangiomyomatosis (n=2); and pneumoconiosis (n=1) and miscellaneous (n=12). Four primary neoplasms [squamous cell carcinoma (n=3); adenocarcinoma (n=1)] were found in the explanted lungs without any pathologic evidence