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elastance (Ees), arterial elastance (Ea) and ventriculo arterial coupling (VAC) were calculated. Vascular impedance spectrum and characteristic impedance (Z) were assessed by Fourier analysis.

Results: Decellularized allografts showed lack of cells and DNA, intact extracellular matrix and normal collagen/elastin content. Their mechanical properties did not differ from native aortic arches and were superior to prostheses. While Ees did not differ between the groups and over time (4.10 ± 1.19 vs. 4.58 ± 1.39 mmHg/mL and 3.21 ± 0.97 vs. 3.96 ± 1.16 mmHg/mL), Ea showed a higher increase in the prosthesis group (4.01 ± 0.67 vs. 6.18 ± 0.20 mmHg/mL, $P < 0.05$) in comparison to decellularized allografts (5.03 ± 0.35 vs. 5.99 ± 1.09 mmHg/mL). This led to impaired VAC in the prosthesis group (+62.5%), while it remained unchanged in the allograft group (+3.9%). Z showed a strong increasing tendency in the prosthesis group and it was markedly higher after replacement when compared to decellularized allografts (44.6 ± 8.3 dyn•sec•cm⁻⁵ vs. 32.4 ± 2.0 dyn•sec•cm⁻⁵, $P < 0.05$).

Conclusion: Total aortic arch replacement leads to contractility-afterload mismatch by means of increased impedance and invert VAC ratio after implantation of conventional prostheses. Implantation of decellularized allografts preserves vascular impedance thereby improving ventriculoarterial mechanoenergetics after aortic arch replacement. Tissue-engineered aortic arch allografts might serve as an alternative for prostheses.

M/11. RHEUMATOID ARTHRITIS: NOT JUST A "RHEUMA" BUT MUCH MORE

Zoltán Szekanecz

Department of Rheumatology, University of Debrecen Faculty of Medicine

Keywords: rheumatoid arthritis, atherosclerosis, cardiovascular disease, cancer, osteoporosis

Rheumatoid arthritis (RA) is a chronic inflammatory disease that leads to joint damage, functional impairment. RA has been associated with multiple comorbidities, including cardiovascular (CV) disease, secondary malignancies, osteoporosis, amyloidosis and others. Due to these comorbidities, RA will result in much shorter life expectancy compared to the general population. In this talk, the pathogenesis, clinical features and management of these comorbidities will be discussed.

MULTIDISCIPLINARY SESSION IX.

N. Radiology

N/1. MONITORING OF THE METABOLIC ALTERATIONS CAUSED BY PORTAL BRANCH LIGATION USING MULTI-MODAL PET/MRI MEASUREMENTS

Andras Budai¹, Andras Fulop¹, Damjan Pekli¹, Diana Korsos¹, Dora Drozgyik¹, David Lauber¹, Laszlo Harsanyi¹, Gabor Lotz², Krisztian Szigeti³, Attila Szijarto¹

¹**1st Department of Surgery, Semmelweis University**

²**2nd Department of Pathology, Semmelweis University**

³**Department of Biophysics and Radiation Biology, Semmelweis University**

Keywords: PVL, Liver regeneration, Hepatocyte, Hepatectomy, PET/MRI

Introduction: The conventional imaging methods diagnostic precision can be highly enhanced with PET/MRI during two-stage hepatectomies combined with portal branch ligation. Also the metabolic changes caused by the portal occlusion may cause diagnostic difficulties. **Methods:** Male Wistar rats