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ePoster Viewing

Virology non-HIV/non-hepatitis

Endomyocardial parvovirus B19 DNA detection is not associated with silent human heart ischaemia or aortocoronary bypass surgery

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Objectives: Cardiotropic viruses are now suspected to be etiological causes or cofactors of dilated cardiomyopathy (DCM). The role of Parvovirus B19 (PVB19) is still debated and its impact on heart is suspected to be mainly mediated by an ischemic mechanism. We hypothesized that PVB19 should be more frequent in ischemic cardiomyopathies than in other cardiomyopathies and assessed the presence of PVB19 in patients who underwent Aorto-coronary bypass (a proxy of silent ischemic cardiomyopathy) comparatively to those who underwent valvular surgeries.

Patients and methods: Between 2013 and 2014, 72 right atrium tissues were sampled during extracorporeal circulation in patients who underwent cardiac surgery in Reims University Hospital (sex ratio M/F=5.54, mean age 67.3±10.0 years). Patient authorized consent was not required because this tissue is considered as a surgery waste. All right atrium samples were investigated for the presence of human PVB19 DNA using specific real-time assays (Argene Biomérieux®). Data were retrospectively extracted from medical records by external reviewer (YNG).

Qualitative variables were compared using Fischer exact test or Pearson Chi test if applicable. Quantitative variables were compared using Mann Whitney U test. A p value <0.05 was considered as significant. All variables with a p value < 0.10 were entered into a multiple logistic regression model. Statistical analyses were performed using Stat view 5.0 software (SAS institute).

Results: Among the 72 patients sampled during extracorporeal circulation, 53 (73.6%) underwent Aorto-coronary bypass. Arterial Hypertension, diabetes mellitus, hypercholesterolemia and active smoking were present in 43, 20, 35 and 14 patients respectively. Aorto-coronary bypass was associated with male sex (94.3% vs 57.8% p=0.006), diabetes mellitus (35.8% vs 5.2% p =0.01) and appeared to be associated with active smoking (24.5% vs 5.2% p=0.09) but not with Arterial Hypertension, age and hypercholesterolemia (not shown). PVB19 DNA detection was evidenced in 69.8% of patients who underwent aorto-coronary bypass comparatively to 84.2% of patients who underwent valvular surgeries (p=0.22). Mean PVB19 viral loads were 2636 versus 1434 cp/ml in Aorto-coronary bypass and valvular surgeries patient groups respectively (p=0.13). Male Sex and diabetes mellitus were associated independently with aorto-coronary bypass (p=0.01 and p=0.02 respectively) but not active smoking (p=0.12). When PVB19 DNA detection was forced in the model, it did not reach statistical significance (p=0.51).

Conclusions: Our findings indicate that PVB 19 DNA detection is common in right atrium samples of patients who underwent cardiac surgery. Moreover PVB19 DNA detection does not appear to be associated with silent heart ischemia or aorto-coronary bypass surgery.