been reported. Echocardiography is the reference diagnostic method. Classical PET CT, biology and histologic findings are reported. Seven patients have centers since 2008; this too small sample does not allow us to draw statistical conclusions.

Among 14 patients (mean age 80.2±8.7 Y [66-91]), a good correlation was found between echocardiography and CMR for LVEF (56.7±8.1% vs 54.3±9.2%, r=0.8). Echocardiography mildly underestimated LV end diastolic volume (EDV) (55.6±25.8 vs 67±24.1mL/m²; r=0.84) and end systolic volume (ESV) (24.9±15.8 vs 31.3±13.9mL/m²; r=0.66). Echocardiography overestimated the LV mass (57.4±23.5 vs 64±22.3g/m²; r=0.5). Left atrial volume (assessed by CMR) was increased (52.8±24.9mL/m²), 8 patients had atrial fibrillation with larger left atrial volume (71.5±26.9 vs 38.8±10.9mL/m² for sinus rhythm, p 0.008). Right ventricular (RV) EDV and ESV assessed by CMR were normal. Mean RVEF was 43.7±8.7% and RVEF was <45% in 8 (57%) patients who also had lower LVEF (p<0.005) and higher pulmonary artery systolic pressure (p=0.01). Late gadolinium enhancement (LGE) was found in 8 cases, 4 with mid-wall LGE, 2 with subendocardial or transmural LGE and 2 with sub epicardial LGE.

Conclusion CMR was feasible, safe and was a useful complement to echocardiography in elderly patients hospitalized for HFpEF. In this population, LVEF assessed by CMR and echocardiography were comparable. Echocardiography underestimated LV volume and overestimated LV mass. Risk factors for adverse outcome such as RV dysfunction and the presence of LGE were found in more than half of the cases.

The author hereby declares no conflict of interest

0009
Cardiac involvement in hypereosinophilic syndrome: role of multimodality imaging

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Cardiac disease occurs in more than 50% of patients with idiopathic hypereosinophilic syndrome; it is the major cause of morbidity and mortality in patients with this syndrome. The overall mortality is high if untreated. We aim to report recent experience in these cardiac diseases, especially echographic features and the contribution of multimodalities imaging.

This retrospective, descriptive and multicenter study reports the findings of patients in cardiac centers of Marseille, Montpellier and Rennes between September 2008 and March 2014. Echographic, MRI cardiac, coronarographic, PET CT, biology and histologic findings are reported. Seven patients have been reported. Echocardiography is the reference diagnostic method. Classical findings are progressive endomyocardial thickening, apical obliteration of one or both ventricles by echogenic material suggestive of fibrosis or thrombus formation, posterior mitral leaflet involvement and papillary dysfunction resulting in severe mitral regurgitation. These features are involved in embolic events or heart failure. MRI helps refine the diagnosis. The characteristic irreversible stage shows a circumferential thickened fibrotic sub endocardium with wall thrombi. The CT identifies non ischemic thrombus excluding coronary artery disease by coronary imaging. Coronary angiography may reveal fibrosis by the smoothed appearance of the ventricular walls and apical filling. PET CT shows general signs of myocarditis, such as myocyte necrosis, in the first stage of the disease.

Symptomatic treatment can lead to cardiac surgery (mitral valve replacement, resection of endomyocardial fibrosis). Each imaging technique plays a role in each of the three stages of the disease and the typical features of myocarditis, thrombus or fibrosis must be identified. Only seven cases of this rare disease have been identified in three french cardiac centers since 2008; this too small sample does not allow us to draw statistical conclusions.

The author hereby declares no conflict of interest

0563
Safety, feasibility and interest of transthoracic echocardiography in a deployed French military Ebola virus disease treatment center in Guinea

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Transthoracic echocardiography (TTE) for Ebola virus disease (EVD) might contribute to evaluate gravity, guide treatment, and finally improve prognosis and has not previously been described. This report delineates the safety, feasibility and clinical implications of systematic TEE for patients with EVD, in the setting of a deployed French military Ebola virus disease Treatment Center in Guinea.

Methods In first 48 hours after admission for EVD, a TTE was performed. All patients were monitored by continue video survey and radio call. Data were collected prospectively on all cases to include TTE hemodynamic parameters, and evaluate EVD cardiac complications. Data were collected by in-live oral transmission to medical center, and correlated to blood test variables including I-Troponin and Brain Natriuretic Peptide.

Result Eight consecutive patients, hospitalized in March 29th underwent TTE evaluation performed by a cardiologist during the first 48 hours of admission. Mean time in Personal Protective Equipment (PPE) was 82 min. No virus accidental exposition during procedure was deployed. TTE were feasible for all patients and all parameters could be studied. All TTE showed signs of hypovolemia with low LV pressure filled despite 2 patients with dyspnea; 1 patient had pericarditis effusion (with inappropriate sinus bradycardia and elevated troponin), and 1 had previous aspect of ischemic cardiomyopathy with conserved left ventricular ejection fraction (LVEF).

Conclusion Early use of TTE in Ebola virus disease is safe, effective and facilitates patient care. It should be considered a feasible additional exam, where physician expertise and resources allow. In our study, contrary to the hypotheses previously made, dyspnea had a non-hemodynamic origin (figure next page).

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### Abstract 0563 - Figure: Echography characteristics

A new turn in SPECT myocardial perfusion imaging: data-driven cardiac gating is now possible with the new generation CZT SPECT Discovery NM 530c.

**Aim** We previously developed a data-driven (DD) respiratory-motion (RM) correction method for conventional SPECT gamma-cameras (REGAT) and adapted it to the new CZT camera (Discovery NM 530c). We recently reported that RM correction with REGAT applied to CZT myocardial perfusion SPECT imaging (MPI) is clinically feasible and impacts substantially myocardial perfusion defects. In this evaluation, we study whether REGAT applied to MPI (Discovery NM 530c) is capable of generating a data-driven (DD) cardiac gating signal allowing the generation of valid global left ventricular (LV) function parameters (EDV: end diastolic volume; ESV: end systolic volume; EF: ejection fraction).

**Materials and methods** Were included 7 patients addressed for stress/rest MPI. All patients had prone stress MPI (2 MBq/Kg 99mTc-Tetrofosmin) and rest MPI 3-hours later (6 MBq/Kg). All acquisitions were made on Discovery NM 530c.

**Results** Stress LV EVD, ESV, and EF were 91±24mL, 29±13mL, and 68±10% vs 95±23mL, 29±12mL, and 70±11% with GSPECT-DD vs GSPECT-M respectively (P<0.05). Rest LV EDV, ESV, and EF were 97±21mL, 32±10mL, and 67±6% vs 101±21mL, 31±10mL, and 69±6% with GSPECT-DD vs GSPECT-M respectively (P<0.05).

**Conclusion** Data-driven cardiac gating of MPI with Discovery NM 530c processed with REGAT is clinically feasible. It provides LV global systolic function parameters similar to those provided by the traditional clinically used ECG monitor gating.

The author hereby declares no conflict of interest.

### Abstract 0056 - Figure: Used Dsr

**Aim** The primary objective was to evaluate the diagnostic performance of elevated LVFP of different Dsr indexes in a heterogeneous cardiological population.

**Material and Methods** We led a prospective mono-centric two-dimensional speckle tracking echocardiography study compared to invasive hemodynamic (left catheterization with measurement of pre-atrial pressure (preA)). Elevation of LVFP was defined as preA>15mmHg. Global Dsr indexes tested were: isovolumetric relaxation Dsr (IvrDsr), early Dsr (EarlyDsr) and late Dsr (LateDsr). Additional Dsr indexes were calculated by multiplying the mean of these parameters: EarlyLateDsr and IvrEarlyLateDsr. Dsr values were multiplied by 10 factor and ratios of E wave to the obtained result gave different composite E/10Dsr indexes.

**Results** Fifty height patients were included. Patients with preA>15mmHg (n=23) were compared with patients with preA<15mmHg (n=35). Mean left ventricular ejection fraction (LVEF) was 55,7±13,3%, mean preA was 13,6±2,2mmHg.

**Conclusion** E/10LateDsr composite indexes, especially E/10LateDsr and E/10IvrEarlyLateDsr are relevant indexes, which may be applied to a large spectrum of cardiomyopathies.

The author hereby declares no conflict of interest.

### Abstract 0056 - Figure: Used Dsr

**Aim** Assessment of left ventricular filling pressures: a prospective speckle tracking echocardiography compared to invasive hemodynamic study

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**Keywords** Assessment of left ventricular filling pressures (LVFP), echocardiographic evaluation, diastolic strain rates (Dsr), clinical use.

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**Background** Assessment of left ventricular filling pressures (LVFP) is a key part of echocardiographic evaluation but actual validated parameters aren't relevant in some routine cases. Use of diastolic strain rates (Dsr) may improve the diagnostic of elevated LVFP in specific cardiomyopathies. Our primary objective was to evaluate the diagnostic performance for elevated LVFP of different Dsr indexes in a heterogenous cardiological population.

**Material and Methods** We led a prospective mono-centric two-dimensional speckle tracking echocardiography study compared to invasive hemodynamic (left catheterization with measurement of pre-atrial pressure (preA)). Elevation of LVFP was defined as preA>15mmHg. Global Dsr indexes tested were: isovolumetric relaxation Dsr (IvrDsr), early Dsr (EarlyDsr) and late Dsr (LateDsr). Additional Dsr indexes were calculated by multiplying the mean of these parameters: EarlyLateDsr and IvrEarlyLateDsr. Dsr values were multiplied by 10 factor and ratios of E wave to the obtained result gave different composite E/10Dsr indexes.

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**Conclusion** E/10LateDsr composite indexes, especially E/10LateDsr and E/10IvrEarlyLateDsr are relevant LVFP indexes, which may be applied to a large spectrum of cardiomyopathies.

The author hereby declares no conflict of interest.

### Abstract 0563 - Figure: Echography characteristics

**Aim** We previously developed a data-driven (DD) respiratory-motion (RM) correction method for conventional SPECT gamma-cameras (REGAT) and adapted it to the new CZT camera (Discovery NM 530c). We recently reported that RM correction with REGAT applied to CZT myocardial perfusion SPECT imaging (MPI) is clinically feasible and impacts substantially myocardial perfusion defects. In this evaluation, we study whether REGAT applied to MPI (Discovery NM 530c) is capable of generating a data-driven (DD) cardiac gating signal allowing the generation of valid global left ventricular (LV) function parameters (EDV: end diastolic volume; ESV: end systolic volume; EF: ejection fraction).

**Materials and methods** Were included 7 patients addressed for stress/rest MPI. All patients had prone stress MPI (2 MBq/Kg 99mTc-Tetrofosmin) and rest MPI 3-hours later (6 MBq/Kg). All acquisitions were made on Discovery NM 530c. Each acquisition was processed with REGAT to generate a dynamic SPECT acquisition study. The latter was processed to generate a DD cardiac gating signal and generate a DD cardiac gating study (GSPECT-DD). In parallel, a mean ECG cardiac GSPECT study was generated using the ECG trigger signal provided by traditional ECG monitor (GSPECT-M). The 2 generated cardiac GSPECT studies were reconstructed on Xeleris workstation and processed with Emory Cardiac Toolbox (ECT). LV EDV, ESV and EF were compared between cardiac GSPECT-DD and GSPECT-M.

**Results** Stress LV EVD, ESV, and EF were 91±24mL, 29±13mL, and 68±10% vs 95±23mL, 29±12mL, and 70±11% with GSPECT-DD vs GSPECT-M respectively (P<0.05). Rest LV EDV, ESV, and EF were 97±21mL, 32±10mL, and 67±6% vs 101±21mL, 31±10mL, and 69±6% with GSPECT-DD vs GSPECT-M respectively (P<0.05).

**Conclusion** Data-driven cardiac gating of MPI with Discovery NM 530c processed with REGAT is clinically feasible. It provides LV global systolic function parameters similar to those provided by the traditional clinically used ECG monitor gating.

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