lagen binding activity to antigen ratio (VWF:CB/Ag) and the percentage of high molecular weight multimers of VWF (%HMWM) did not change after exercise in the non obstructive group but were lowered in patients with latent obstruction (both p=0.003). Incomplete SAM at rest was the strongest independent predictor of %HMWM drop (r=-0.70, p<0.0001). %HMWM after exercise tightly correlated with exercise peak gradient (r=-0.78, p<0.0001) and the persistence of obstruction during recovery (r=-0.67, p=0.005).

Conclusion: Incomplete SAM and mitral S velocity at rest are the main predictors of latent obstruction in HCM. Latent obstruction elicits a rapid cleavage of the largest multimers of VWF which is related to the peak gradient but also to the persistence of obstruction during recovery.

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Implementation of patients reaction is better than implementation of knowledge in Heart failure patients

Patrick Jourdain, Joël Dagorn, François Funck, Michel Bellorini, Jean Loiret, Michel Desnos
CH R Dubos, UT d'insuffisance cardiaque, Pontoise, France

Heart failure remains a disease with poor prognosis despite the therapeutic advances of recent decades. Nearly a third of hospital admissions are due to errors in dietetics follow up or therapeutic monitoring. Therapeutic education of patients with heart failure is growing fast in France. For the "Haute autorité de santé" (HAS), evaluation of education programs is an essential element in the same way that the educational diagnosis and interactivity. We wanted to determine what the assessment could predict the onset of the test combined death and hospitalization for heart failure.

We included 398 patients with systolic heart failure who received a therapeutic education between 2003 and 2008. The program involved an educational diagnosis individual training sessions with the disease, sessions Implementation situation, self-physical and dietary. During this educational process, patients filled a questionnaire initial knowledge (Q1) and a questionnaire at the end of training (Q2) and one year of it (Q3). They also fulfilled a clinical case assessment and post training within one year.

The average age of patients was 65 (± 4), LVEF of 34 (± 4), the average BNP of 235 (± 346). There is no correlation between the scores of knowledge questionnaires and questionnaires of clinical cases. In ROC curve there is no cut off for predicting the occurrence of a major event. In survival curve there is no difference between patients having a response greater than the median in questionnaire1, 2 or 3. however patients with a clinical performance at post training clinical cases above the median had an event-free survival significantly better than those with a response below the median (p <0001).

Conclusion: The evaluation of the reactions of patients with clinical cases is greater than the simple evaluation of the knowledge of patients in terms of predicting survival without hospitalization for heart failure.

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Determinants of B-type natriuretic peptide levels and left atrial volume in stable patients in sinus rhythm: an echocardiographic-catheterization study

Marie-Perrine Jaubert (1), Stéphane Arques (2), Alexane Nicoud (1), Laurent Bonello (1), Pascal Sbragia (1), Sébastien Armero (1), Franck Paganelli (1)
(1) Hôpital Nord, Marseille Cedex 15, France – (2) CH Aubagne, Aubagne, France

Background: B-type natriuretic peptide (BNP) (Advia Centaur System) and left atrial volume index (LAVi) are regarded as powerful markers of global myocardial function. Several confounding factors are known to potentially influence this relation. The aim of the present study was to evaluate the determinants of BNP and LAVi in the same population of stable patients referred for catheterism.

Methods: 74 consecutive patients were included. Exclusion criteria were arrhythmias, acute coronary syndrome, exacerbation of heart failure and severe left-sided valve disease. All the data were obtained within the same morning for each patient. All following variables were tested: age, gender, body mass index, systolic arterial pressure, heart rate, LV ejection fraction (LVEF), LV mass index

(LVM), significant mitral regurgitation (MR), serum hemoglobin (Hb), creatinine clearance (CC), LV end-diastolic pressure (LVEDP), extent of coronary disease.

Results: Univariate determinants of BNP were age, LVEF, LVM, MR, LVEDP, extent of coronary disease, Hb and CC. By multiple regression analysis, the independant determinants of BNP were age, LVEDP and LVEF (p<0,005 for all). Univariate determinants of LAVI were age, significant MR, LVM, LVEF and LVEDP. By multiple regression analysis, the independent predictors were LVM and LVEDP (p=0,001 for all). BNP was not predicted by LAVi in the multivariate model.

Conclusion: Our study confirms that both BNP and LAVi can be used as markers of global myocardial dysfunction in stable patients in sinus rhythm. However, age must be taken into consideration before interpreting BNP results.

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Care management of heart failure in elderly patients in France. Results from the DEVENIR study

Maxime Guenoun (1), Patrick Assyag (2), Pierre Clerson (3), Christine Contre (4), Leurs Irina (4), Pascal Poncelet (1), Jean Francois Thebaut (1), Alain Cohen Solal (5)
(1) CNCF, Paris, France – (2) SAINT ANTOINE, Paris, France – (3) ORGAMETRIE, Roubaix, France – (4) MENARINI, Rungis, France – (5) LARIBOISIERE, Paris, France

Rationale: The part of elderly patients (pts) in heart failure (HF) population is growing. They might pose specific problems due to the greater proportion of HF with preserved LVEF, more frequent comorbidities or contra-indications to recommended HF treatment.

Objectives: to describe the care management of pts > 80-year treated for HF in France.

Methods: Cross sectional observational survey with retrospective collection of data at hospital discharge. Pts must have been diagnosed with CHF and have been hospitalised for CHF within the previous 18 months. Pts are classified according to the LVEF at hospital discharge.

Results: 412 French outhospital cardiologists entered 1 452 pts meeting the inclusion criteria. FEVG at hospital discharge was known for 1408 pts. 355 (25%) were more than 80-year-old. Management care at hospital discharge according to age and LVEF is detailed below.

		LVEF < 40%	LVEF 40-50%	LVEF > 50%	Total
Age>80	ACEI/ARB	84%	81%	80%	82%*
	BB	71%	67%	40%†‡	62%*
	Loop diuretics	92%	85%	85%	88%
	Spironolactone/eplerenone	26%	20%	18%	22%*
	Digoxin	20%	15%	29%	21%*
	Calcium antagonists	10%	14%	37%†‡	18%
	Anticoagulants	49%	45%	51%	49%*
Age≤80	ACEI/ARB	93%	93%	85%†‡	92%
	BB	79%	78%	76%	79%
	Loop diuretics	90%	82%	79%†§	86%
	Spironolactone/eplerenone	35%	21%	25%†§	30%
	Digoxin	16%	15%	16%	15%
	Calcium antagonists	9%	19%	21%†§	13%
	Anticoagulants	42%	39%	39%	41%

†p<0.05 for comparisons between LVEF > 50% and LVEF<40%;
‡ p<0.05 for comparisons between LVEF>50% and LVEF between 40% and 50%;
§: p<0.05 for comparisons between LVEF<40% and LVEF between 40% and 50%;
* p<0.05 for comparisons between > 80 and ≤ 80 years old adjusted for LVEF.

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Conclusion: BB, ACEI/ARB, spironolactone/eplerenone are less often prescribed in elderly patients contrasting with digoxin and anticoagulants prescription. These differences persist after adjustment on LVEF.

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Importance of haemodilution in haemoglobin concentrations in outpatients with chronic heart failure. Results of IMPACT-RECO Program III

Michel Galinier (1), Nacima Demil (2), Patrick Assyag (3), Pascal De Groote (4), Richard Isnard (5), Alain Ducardonnet (6), Guillaume Jondeau (7), Jean-François Thébaut (8), Michel Komajda (5)
(1) Faculté de Médecine Toulouse-Rangueil, Service Cardiologie, Toulouse, France – (2) astrazeneca, Rueil Malmaison, France – (3) Hôpital Saint Antoine, Service Cardiologie, Paris, France – (4) Pôle cardiologie et maladie vasculaires, Hôpital cardiologique, Lille, France – (5) Hôpital Pitié Salpétrière, Département de cardiologie, Paris, France – (6) Institut coeur effort santé, Paris, France – (7) Hôpital Bichat, Service Cardiologie, Paris, France – (8) Centre cardiologique Alfred Kastler, Sarcelles, France

Background: *The prevalence of anaemia in chronic heart failure (CHF) ranges widely from 4 to 70% due to a lack of an established consistent definition of anaemia in CHF. Furthermore haemodilution impacts haemoglobin concentrations and could be an important cause of anaemia in CHF.*

Aims: *The IMPACT-RECO program III analysed the impact of NYHA class of CHF and of comorbidities on therapeutic management of French outpatients with stable CHF and left ventricular systolic dysfunction.*

Methods: *This survey was carried out from March 2007 to December 2007 among randomly selected French private cardiologists. 1574 patients with CHF and left ventricular ejection fraction (LVEF) < 40% were included.*

Results: *Mean age was 71 ± 11 years, 75% of the patients were men, 34% were in NYHA class III-IV, 54% had coronary artery diseases, 30% had atrial fibrillation and the mean LVEF was 34 ± 7%. Haemoglobin concentration was recorded in 953 patients. Anemia was defined as a haemoglobin concentration < 12 g/L in women and < 13 g/L in men. The impact of NYHA class and congestive status in haemoglobin concentrations are summarized in the table.*

Conclusions: *Congestive status impacts haemoglobin concentrations more than the severity of CHF estimated by NYHA class. Haemodilution is an important aetiology of anaemia in CHF, thus haemoglobin concentration should be evaluated if possible in patients without congestive signs.*

Haemoglobin (g/L)	NYHA I	NYHA II without congestive signs	NYHA II with congestive signs	NYHA III	NYHA IV
n	107	448	62	295	37
Men	13.3 ± 1.6	13.4 ± 1.7	12.1 ± 1.9	12.7 ± 1.8	13.4 ± 1.6
Women	12.7 ± 1.2	12.6 ± 1.3	11.8 ± 2.5	12.1 ± 1.6	12.2 ± 2.1
Anaemia N (%)	33 (30.8)	150 (33.5)	42 (67.7)**	149 (50.5)*	15 (40.5)

* p < 0.05: NYHA III vs NYHA I,II /
** p < 0.05 : NYHA II with congestive signs vs NYHA I,II without congestive signs III,IV.

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Left ventricular systolic function and Response to Cardiac Resynchronization Therapy is influenced by Right ventricular function as assessed by Echocardiography

Anne Bernard, Erwan Donal, Christophe Thébault, Romain Ollivier, Jean-Claude Daubert, Philipe Mabo, Christophe Leclercq
CHU RENNES, Cardiologie, Rennes, France

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Background: Right ventricular (RV) function has been proven to be a major determinant of clinical outcome in Chronic Heart Failure (CHF). The right and left (L) ventricles inter dependence has been weakly evaluated but might impact on response to treatments and prognosis.

Aim: We sought to assess the impact of RV-function on LV-function by studying longitudinal and radial strains in CHF-patients selected for cardiac resynchronization therapy (CRT).

Methods: Thirty-eight consecutive CHF-patients (New York Heart Association class III/IV, left ventricular ejection fraction [LVEF] less than 35%, QRS greater than 120 ms) were studied before and after 6-month of CRT. RV function was assessed by tricuspid annulus plane systolic velocity (Vs) with a cut-off of 11.5 cm/s. Global LV longitudinal strain (GLS) was measured (from the apical 4-chamber, apical 3-chamber and apical 2-chamber views) before and after CRT. Mean radial strain was measured from the parasternal mid-ventricular view. Reverse remodeling was defined by echocardiography at 6-month by a decrease in LV end-systolic volume ≥ 15%.

Results: Eighteen patients had RV-dysfunction (mean Vs=7.6 ±1.2cm/s) and 20 had normal RV-function (13.6±2.7cm/s). LVEF and volumes were non different between groups. Patients with RV-dysfunction had significantly worst global longitudinal strain before CRT (A-4Ch=-5.3±1.5% vs. -7.4±2.2%, p=0.01; A-2Ch=-5.7±1.2% vs. -9±2%, p<0.01; A-3Ch=-5±0.9% vs. -8.4±2.2%, p<0.01). After CRT, differences in global longitudinal strain were still significant. Considering mean radial strain, there were no differences between groups. The likelihood of response to CRT was significantly worse in patients having a RV dysfunction (75% vs. 44%, p<0.05).

Conclusion: RV dysfunction diagnosed in patients planed for CRT is associated with a significantly worse LV global longitudinal function and a significantly weak likelihood of response to CRT at 6-month.

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Primary prevention for heart failure among old hypertensive patients: Contribution and perspectives derived from recent trials

François Dievart (1), Olivier Hanon (2)
(1) Clinique Villette, Dunkerque, France – (2) Hôpital Broca, Paris, France

Background: In 2009, in France, heart failure (HF) affects around 1 000 000 Pts and is the first cause of hospitalization among patients (Pts) above 80 years of age. Despite constant progresses, results of HF secondary management are still moderate. Mortality rates decrease slowly, remaining around 30 to 40% at 1year and reaching 70% at 5 years. Primary prevention of HF could therefore be an effective strategy. In particular, hypertension (HT) is strongly associated with HF. Meta-analyses (MA) demonstrated a correlation, even not linear, between blood pressure (BP) decrease and HF risk, suggesting different impacts of anti-HT strategies. In the ALLHAT trial, the lowest rates of hospitalization and fatal HF were found for Pts receiving diuretic or ACE inhibitor.

Methods: INDANA MA data, assessed among 1 670 Pts above 80, have been compared to the recent, randomized, double-blind, multicentric HYVET trial results. HYVET evaluated the benefits of treating 3845 Pts ≥ 80 years with a sustained systolic BP≥160 mmHg using indapamide +/- perindopril strategy (I-PS) or placebo.

Results: INDANA results showed a significant 39% reduction of HF associated with a 6% relative excess of death from all causes in active group. In HYVET, active treatment was associated with a 21% reduction of all causes death (p=0,02) and a significant 64% reduction of HF (p < 0,001), with an incidence decreasing from 1,48% to 0,53% per year. According to published figures, one HF would be prevented by treating 52 Pts during 2 years.

Conclusion: these results provide evidence that I-PS in HT Pts above 80 is beneficial and effective for preventing HF and mortality. These results, if applied to French population, could contribute to a significant reduction of HF incidence among old HT patients.