BEST OF 2014
CARDIAC
REHABILITATION

Dr B. PAVY, Machecoul - FR
## Déclaration de Relations Professionnelles

*Disclosure Statement of Financial Interest*

J’ai actuellement, ou j’ai eu au cours des deux dernières années, une affiliation ou des intérêts financiers ou intérêts de tout ordre avec une société commerciale ou je reçois une rémunération ou des redevances ou des octrois de recherche d'une société commerciale :

I currently have, or have had over the last two years, an affiliation or financial interests or interests of any order with a company or I receive compensation or fees or research grants with a commercial company :

<table>
<thead>
<tr>
<th>Affiliation/Financial Relationship</th>
<th>Company</th>
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<tbody>
<tr>
<td>Grant/Research Support</td>
<td>none</td>
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<tr>
<td>Consulting Fees/Honoraria</td>
<td>none</td>
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<tr>
<td>Major Stock Shareholder/Equity</td>
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<tr>
<td>Royalty Income</td>
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<tr>
<td>Ownership/Founder</td>
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<tr>
<td>Intellectual Property Rights</td>
<td>None</td>
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<tr>
<td>Other Financial Benefit</td>
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</tbody>
</table>
Post Operative Pericardial Effusion 2
Hote-line ESC 2014

P. Meurin 1, LS. Lelay-Kubas 2, BP. Pierre 3, MCI. Iliou 4, BP. Pavy 5, JLB. Bussiere 6, JPB. Beugin 7, TF. Farrokhi 8, H. Pereira 9, JY. Tabet 1
(1) Les Grands Prés, Villeneuve Saint Denis, France (2) Centre de Réadaptation, Bois Gibert, France (3) I.R.I.S, Marcy L’étoile, France (4) Corentin Celton Hospital, Issy Les Moulineaux, France (5) Hospital Center Loire-Vendee-Ocean, Machecoul, France (6) Les Fauvettes, Chatillon, France (7) La Mitterie, Lomme, France (8) Hospital of Bligny, Briis Sous Forges, France (9) European Hospital Georges Pompidou, Paris, France

50 à 85% (tamponade : 1 to 2%)
POPE Study (2010 ) : ineffectiveness of NSAI (Diclofenac)
POPE 2 Study : test Colchicin

Prospective multicentric study (10 centres)

<table>
<thead>
<tr>
<th>Pericardial effusion</th>
<th>colchicin</th>
<th>placebo</th>
<th>p</th>
</tr>
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<tbody>
<tr>
<td>initial grade</td>
<td>2.9</td>
<td>3.0</td>
<td>0.46</td>
</tr>
<tr>
<td>Evolution</td>
<td>-1.1</td>
<td>-1.3</td>
<td>0.23</td>
</tr>
<tr>
<td>tamponade</td>
<td>7</td>
<td>6</td>
<td>0.80</td>
</tr>
</tbody>
</table>
Etude OLMSTED (Minnesota)
2991 patients post-ACS
1987 to 2010
1569 rehab (52.5%)
Follow up 7.6 years

All rehospitalization : 0.75 (0.65-0.87)
Cardiac Rehospit. : 0.80 (0.65-0.99)
Other rehosp. : 0.72 (0.61-0.85)
Mortality : 0.58 (0.49-0.68)
Kashish Goel
Cardiac rehabilitation is associated with reduced long-term mortality in patients undergoing combined heart valve and CABG surgery
European Journal of Preventive Cardiology 2013 on line DOI: 10.1177/2047487313512219

OLMSTED study (Minnesota) 1996-2007
201 patients = CABG + Valve
Follow up 6.8 years

Rehab = 94 (47%)

Mortality:
HR = 0.48 (0.27-0.87)
Mitral surgery:
HR = 0.24 (0.08-0.77)
Bernhard Rauch
Short-term comprehensive cardiac rehabilitation after AMI is associated with reduced 1-year mortality: results from the OMEGA study
European Journal of Preventive Cardiology 2013 on line
DOI: 10.1177/2047487313486040

OMEGA study
3560 patients post-MI
Rehab = 2513 (70.6%)
Follow up 4 to 12 months

Rehabilitation modalities
Earlyness (< 14 days post-MI)
3 à 4 weeks
Specific Centres (hospit or ambulatory)
Multidisciplinarity

Table 2. Clinical events within the time period of 4–12 months after randomization for omega-3 fatty acids or placebo

<table>
<thead>
<tr>
<th>Event</th>
<th>Total</th>
<th>With CR</th>
<th>No CR</th>
<th>OR (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total death</td>
<td>2.0 (70/3547)</td>
<td>1.1 (28/2505)</td>
<td>4.0 (42/1042)</td>
<td>0.46 (0.27–0.77)</td>
</tr>
<tr>
<td>MACCE</td>
<td>4.8 (162/3347)</td>
<td>3.4 (81/2376)</td>
<td>8.3 (81/971)</td>
<td>0.53 (0.38–0.75)</td>
</tr>
<tr>
<td>Cardiac death</td>
<td>1.4 (50/3547)</td>
<td>0.7 (18/2505)</td>
<td>3.1 (32/1042)</td>
<td>0.43 (0.23–0.79)</td>
</tr>
<tr>
<td>Non-fatal myocardial infarction</td>
<td>2.1 (70/3308)</td>
<td>1.8 (43/2362)</td>
<td>2.9 (27/946)</td>
<td>0.72 (0.43–1.21)</td>
</tr>
<tr>
<td>Non-fatal stroke</td>
<td>0.7 (23/3318)</td>
<td>0.4 (10/2364)</td>
<td>1.4 (13/954)</td>
<td>0.35 (0.15–0.84)</td>
</tr>
<tr>
<td>PCI/CABG</td>
<td>12.5 (415/3312)</td>
<td>12.8 (303/2364)</td>
<td>11.8 (112/948)</td>
<td>1.00 (0.78–1.27)</td>
</tr>
<tr>
<td>Heart failure</td>
<td>6.6 (221/3326)</td>
<td>6.2 (147/2367)</td>
<td>7.7 (74/959)</td>
<td>0.97 (0.71–1.33)</td>
</tr>
<tr>
<td>Rehospitalization</td>
<td>34.2 (1143/3341)</td>
<td>33.4 (794/2378)</td>
<td>36.2 (349/963)</td>
<td>0.96 (0.81–1.13)</td>
</tr>
</tbody>
</table>
The best is the enemy of good
U. Mons

A reverse J-shaped association of leisure time physical activity with prognosis in patients with stable coronary heart disease: evidence from a large cohort with repeated measurements

Heart 2014;100:1043–1049

Table 2  Event numbers, person-years and crude event rates per 1000 person-years by frequency of strenuous physical activity at baseline

<table>
<thead>
<tr>
<th></th>
<th>Incidence/mortality rate (95% CI) per 1000</th>
</tr>
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<tbody>
<tr>
<td><strong>Cardiovascular mortality</strong></td>
<td></td>
</tr>
<tr>
<td>Daily</td>
<td>14</td>
</tr>
<tr>
<td>5–6×/week</td>
<td>10</td>
</tr>
<tr>
<td>2–4×/week</td>
<td>19</td>
</tr>
<tr>
<td>1–4×/month</td>
<td>15</td>
</tr>
<tr>
<td>Rarely/never</td>
<td>23</td>
</tr>
<tr>
<td><strong>All-cause mortality</strong></td>
<td></td>
</tr>
<tr>
<td>Daily</td>
<td>24</td>
</tr>
<tr>
<td>5–6×/week</td>
<td>14</td>
</tr>
<tr>
<td>2–4×/week</td>
<td>32</td>
</tr>
<tr>
<td>1–4×/month</td>
<td>26</td>
</tr>
<tr>
<td>Rarely/never</td>
<td>35</td>
</tr>
</tbody>
</table>
Paul T. Williams
Increased cardiovascular disease mortality associated With excessive exercise in heart attack survivors

2377 patients after ACS
Follow up 10.4 years
Volume of physical activity in MET-h/day
Cardiac mortality
HR MET-h/d
0.79 (0.58-1.05)
1.1–1.8
0.76 (0.59-0.99)
1.8–3.6
0.50 (0.32-0.76)
3.6–5.4
0.37 (0.19-0.65)
5.4–7.2
0.88 (0.45-1.58)
>7.2

Running 50 km / week
Walking 75 km / week
Vienna Austria
41 LVAD patients in 2010 – 2012
Mean age 54.8 y (male 80%)
48 days post-implantation
Mean duration : 32 days

Exercise test duration : 19 ± 4 vs 14 ± 2 min
Peak VO2 (n = 15) : 14.5 ± 5 vs 11.3 ± 4

Adverse effect : 1 NSVT
Italian monocentric study
78 octogenarians (83.3 y) with TAVI vs 80 patients with bio AVR
Delay : 13.7 days
90 min training (callisthenic – aerobic – respiratory)
Peak VO2 : 12.5 vs 13.9 ml/min/kg
Δ6MWT : 60.4 vs 72.3 m
7 studies (279 patients) 63–73 years
follow up ranged from 12–24 weeks
Improvement in peak VO2 (11.3-28.3%) in 5 studies
Improving of QoL

But

Few trials, few patients (ranged from 24-64)
Heterogeneous population
Heterogeneous criteria for defining HFpEF
Heterogeneous interventions

We must wait for long term follow up and effects on major cardiac events
A 40-year-old off-duty firefighter suddenly collapsed after playing a game of racquet-ball. Idiopathic VF treated by defibrillator, then implantation of an ICD. High-intensity, occupation-specific cardiac rehabilitation training program. 18 sessions without adverse effect (under supervision of ICD). Dubble product was 32460 (under 36000 threshold). He reached a functional capacity of 17 METs (12-MET required).
D J Carlson
Isometric exercise training for blood pressure management: A systematic review and meta-analysis

9 studies with 223 participants
Normotensive = 6  Hypertensive = 3
Handgrip = 6  Leg exercise = 3

decrease BP in mm Hg
- SBP
- DBP

all: 6.7 3.9
hyperT: 4.3 5.5
normoT: 9.2 3.1
G Chiva-Blanch
Latest Evidence of the Effects of the Mediterranean Diet in Prevention of Cardiovascular Disease
Curr Atheroscler Rep (2014) 16:446
DOI 10.1007/s11883-014-0446-9
Nurses 40 to 70 year-old
Greater adherence to the Mediterranean diet was associated with longer telomeres
Takehiro Sugiyama
Different Time Trends of Caloric and Fat Intake Between Statin Users and Nonusers Among US Adults
Gluttony in the Time of Statins?

JAMA Intern Med. 2014;174(7):1038-1045

Cohort of 27886 adults (NHANES – US)
Follow up 1999 - 2010
Exercise training is safe after coronary stenting: a prospective multicentre study

Marie-Christine Iliou¹, Bruno Pavy², Jimena Martinez¹, Sonia Corone³, Philippe Meurin⁴, Philippe Tippin⁵, on behalf of CRS investigators and GERS (Groupe Exercice Réadaptation, Sport) from the French Society of Cardiology

CLINICAL RESEARCH

Validation of the French version of the MacNew heart disease health-related quality of life questionnaire

Validation de la version française du questionnaire de qualité de vie en cardiologie MacNew

Bruno Pavy¹,*, Marie-Christine Iliou¹, Stefan Höfer³, Bénédicte Vergèse-Patois⁴, Sonia Corone⁵, Patrick Aeberhard⁶, Daniel Curnier⁷, Jacques Henry⁸, Anne Ponchon-Weess⁹, Neil Oldridge⁹

Archives of Cardiovascular Disease (2014) online
Mise au point

La réadaptation cardiaque après infarctus du myocarde en France : un taux d’abstention trop élevé

*Cardiac rehabilitation after myocardial infarction in France: Still not prescribed enough*

B. Pavy, J. Darchis, E. Merle, M. Caillon

Article original

Patients sous assistance circulatoire mécanique mono-gauche en centre de réadaptation cardiaque. Retour d’une expérience de prise en charge

*Left ventricle assist device: Rehabilitation and management programmes*

M.-C. D’agrosa-Boiteux, E. Geoffroy, N. Dauphin, L. Camilleri, R. Eschalier, C. Cuenin, A. Moisa
Inactivity is important in Turkey

Obesity 35%

The governor of the north-west area decided not to allow people to take the lift under 3rd floor

We wait for the results…