كلية الطب بالمنستير
FACULTÉ
DE Médecine
DE MONASTIR

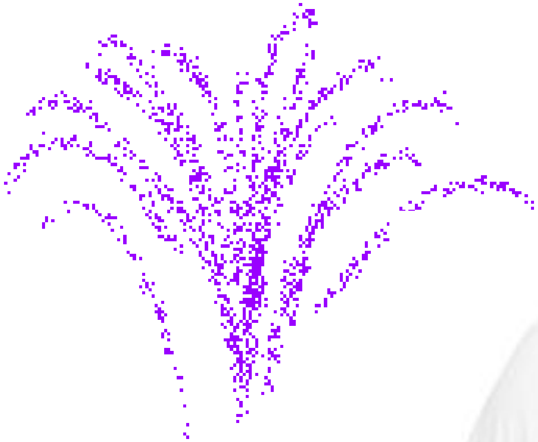
CENTRE HOSPITALO-UNIVERSITAIRE FATTOUMA BOURGUIBA DE MONASTIR
المستشفى الجامعي فطومة بورقيبة بالمنستير

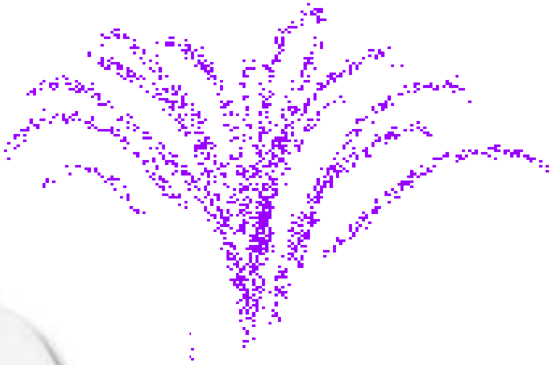
JCOR 2017

Cardiomyopathie du Péripartum

Fahmi DACHRAOUI
Réanimation Polyvalente - Monastir
Hammamet, 20 Mai 2017

MonastiRéa





ESPERANCE
SPORTIVE DE TUNIS
1919

2016-2017

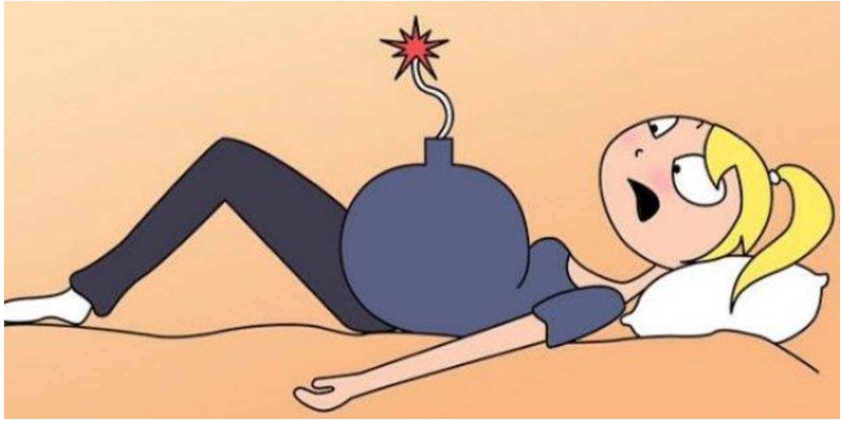
Défit: Distinction

Modification physiologiques

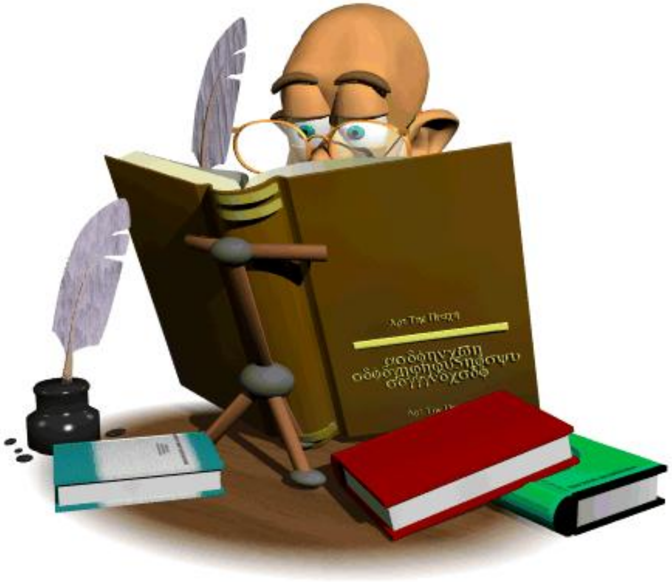
≠

Pathologie cardio-vasculaire

Confusion →retard et/ou mauvais diagnostic



Histoire en quelques dates



1971

Natural Course of Peripartum Cardiomyopathy

By JOHN G. DEMAKIS, M.D., SHAHBUDIN H. RAHIMTOOLA, M.B., M.R.C.P.E.,
GEORGE C. SUTTON, M.D., W. ROBERT MEADOWS, M.D.,
PAUL B. SZANTO, M.D., JOHN R. TOBIN, M.D.,
AND ROLF M. GUNNAR, M.S., M.D.

Illinois

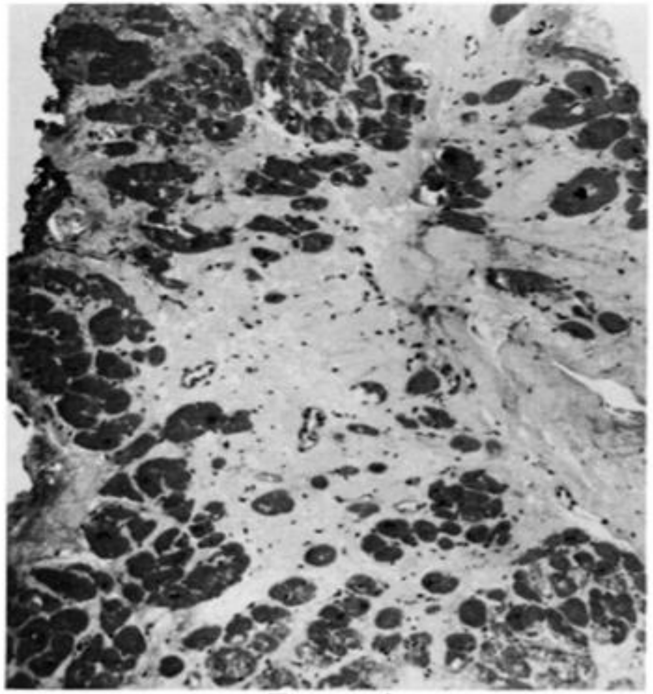


Figure 4

Histological section of myocardial biopsy specimen taken from the outflow tract of the right ventricle during exploratory thoracotomy from a patient in group B. There is extensive myocardial fibrosis. Mallory stain

- 27 patientes

Terme: **CMPP**

Critères de définition:(disponibilités de l'époque!)

1) IC (dernier mois de grossesse ou dans les 5 mois suivant l'accouchement
2) l'absence d'une étiologie d'IC
3) Absence d'une path cardiaque connue avant le dernier mois de grossesse.

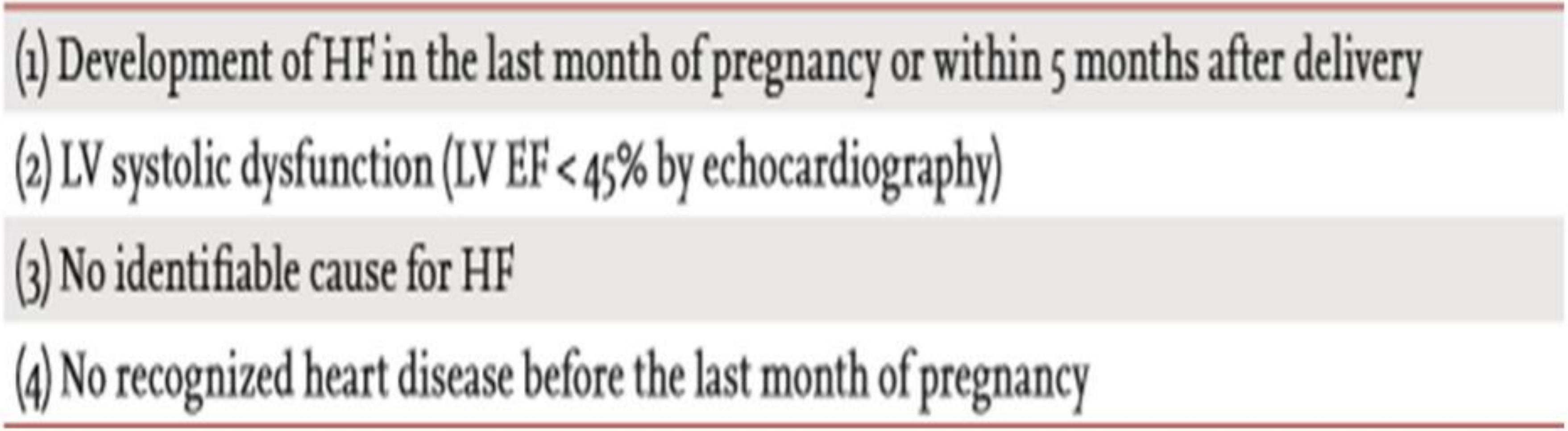
e

Circulation. 1971;44:1053-1061

2016

Définition… plus simple

CMPP: LES **4 Critères diagnostiques**



(1) Development of HF in the last month of pregnancy or within 5 months after delivery

(2) LV systolic dysfunction (LV EF < 45% by echocardiography)

(3) No identifiable cause for HF

(4) No recognized heart disease before the last month of pregnancy

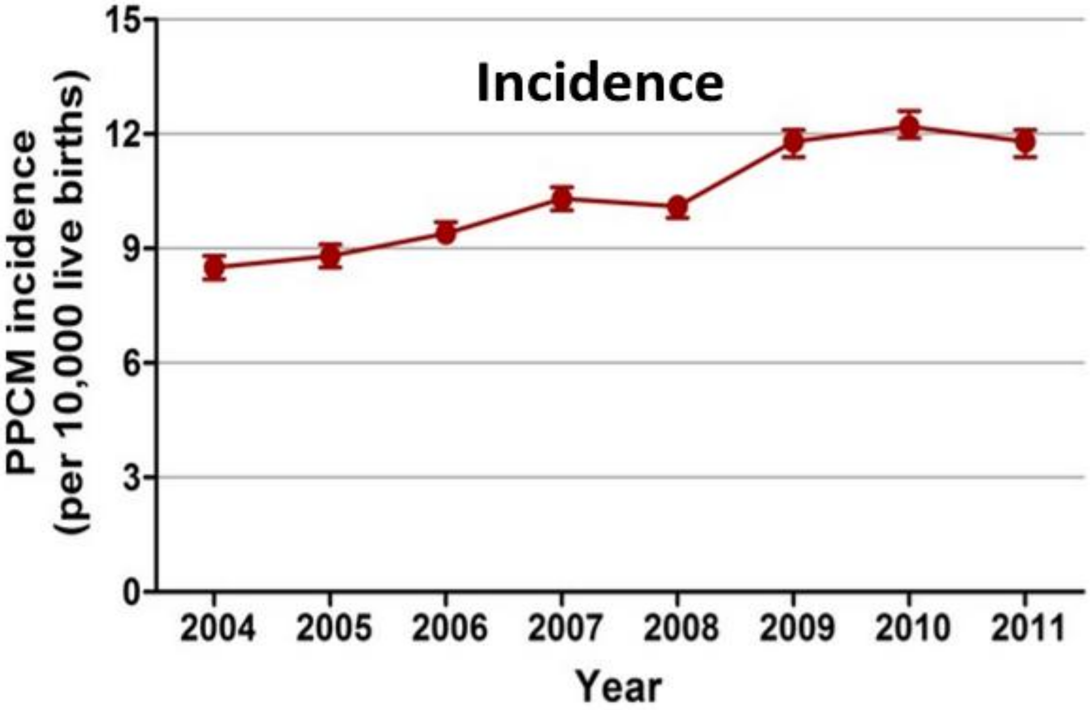
Mais pas toujours associée a une dilatation VG

Working Group on PPCM of the Heart Failure Association (HFA) of the European Society of Cardiology

Epidémiologie

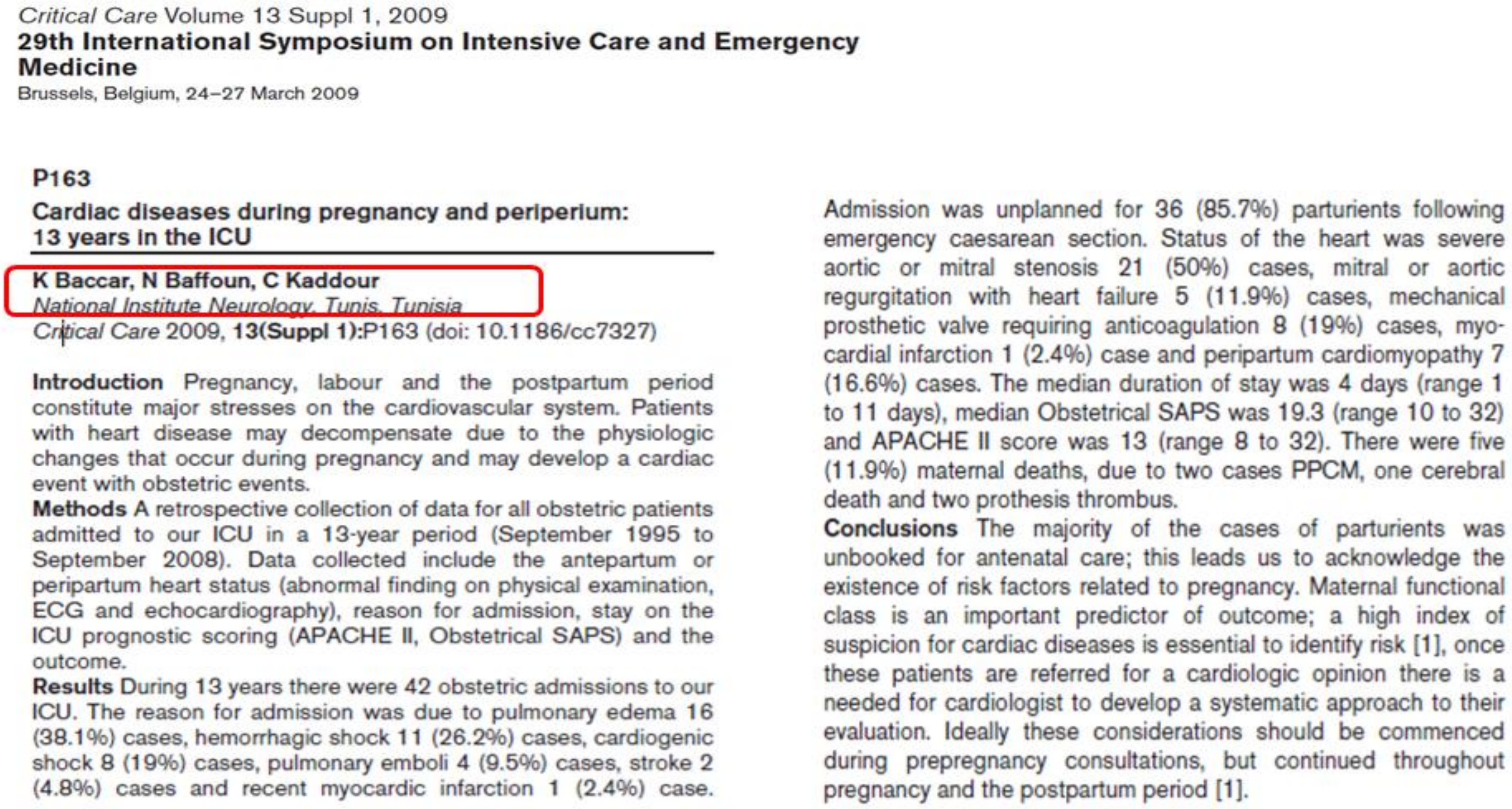
Temporal Trends in Incidence and Outcomes of Peripartum Cardiomyopathy in the United States: A Nationwide Population-Based Study

Dhaval Kolte, MD, PhD;* Sahil Khera, MD;* Wilbert S. Aronow, MD; Chandrasekar Palaniswamy, MD; Marjan Mujib, MD, MPH; Chul Ahn, PhD; Diwakar Jain, MD; Alan Gass, MD; Ali Ahmed, MD, MPH; Julio A. Panza, MD; Gregg C. Fonarow, MD



Conclusion—From 2004 to 2011, the incidence of PPCM has increased in the United States. Maternal MAE rates overall have remained unchanged while cardiogenic shock, utilization of mechanical circulatory support, and in-hospital mortality have increased during the study period. Further study of the mechanisms underlying these adverse trends in the incidence and outcomes of PPCM are warranted. **(*J Am Heart Assoc.* 2014;3:e001056 doi: 10.1161/JAHA.114.001056)**

J Am Heart Assoc. 2014 Jun; 3(3): e001056.



Critical Care Volume 13 Suppl 1, 2009

29th International Symposium on Intensive Care and Emergency Medicine

Brussels, Belgium, 24–27 March 2009

P163

Cardiac diseases during pregnancy and periperium: 13 years in the ICU

K Baccar, N Baffoun, C Kaddour
National Institute Neurology, Tunis, Tunisia

Critical Care 2009, **13(Suppl 1):**P163 (doi: 10.1186/cc7327)

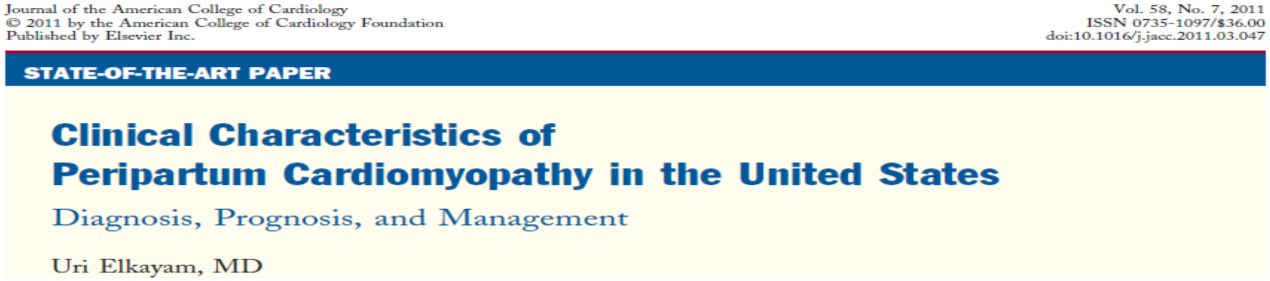
Introduction Pregnancy, labour and the postpartum period constitute major stresses on the cardiovascular system. Patients with heart disease may decompensate due to the physiologic changes that occur during pregnancy and may develop a cardiac event with obstetric events.

Methods A retrospective collection of data for all obstetric patients admitted to our ICU in a 13-year period (September 1995 to September 2008). Data collected include the antepartum or peripartum heart status (abnormal finding on physical examination, ECG and echocardiography), reason for admission, stay on the ICU prognostic scoring (APACHE II, Obstetrical SAPS) and the outcome.

Results During 13 years there were 42 obstetric admissions to our ICU. The reason for admission was due to pulmonary edema 16 (38.1%) cases, hemorrhagic shock 11 (26.2%) cases, cardiogenic shock 8 (19%) cases, pulmonary emboli 4 (9.5%) cases, stroke 2 (4.8%) cases and recent myocardic infarction 1 (2.4%) case. Admission was unplanned for 36 (85.7%) parturients following emergency caesarean section. Status of the heart was severe aortic or mitral stenosis 21 (50%) cases, mitral or aortic regurgitation with heart failure 5 (11.9%) cases, mechanical prosthetic valve requiring anticoagulation 8 (19%) cases, myocardial infarction 1 (2.4%) case and peripartum cardiomyopathy 7 (16.6%) cases. The median duration of stay was 4 days (range 1 to 11 days), median Obstetrical SAPS was 19.3 (range 10 to 32) and APACHE II score was 13 (range 8 to 32). There were five (11.9%) maternal deaths, due to two cases PPCM, one cerebral death and two prothesis thrombus.

Conclusions The majority of the cases of parturients was unbooked for antenatal care; this leads us to acknowledge the existence of risk factors related to pregnancy. Maternal functional class is an important predictor of outcome; a high index of suspicion for cardiac diseases is essential to identify risk [1], once these patients are referred for a cardiologic opinion there is a needed for cardiologist to develop a systematic approach to their evaluation. Ideally these considerations should be commenced during prepregnancy consultations, but continued throughout pregnancy and the postpartum period [1].

7 CMPP/42 :16%
2deces/5 /CMPP



Journal of the American College of Cardiology
© 2011 by the American College of Cardiology Foundation
Published by Elsevier Inc.
Vol. 58, No. 7, 2011
ISSN 0735-1097/$36.00
doi:10.1016/j.jacc.2011.03.047

STATE-OF-THE-ART PAPER

Clinical Characteristics of Peripartum Cardiomyopathy in the United States

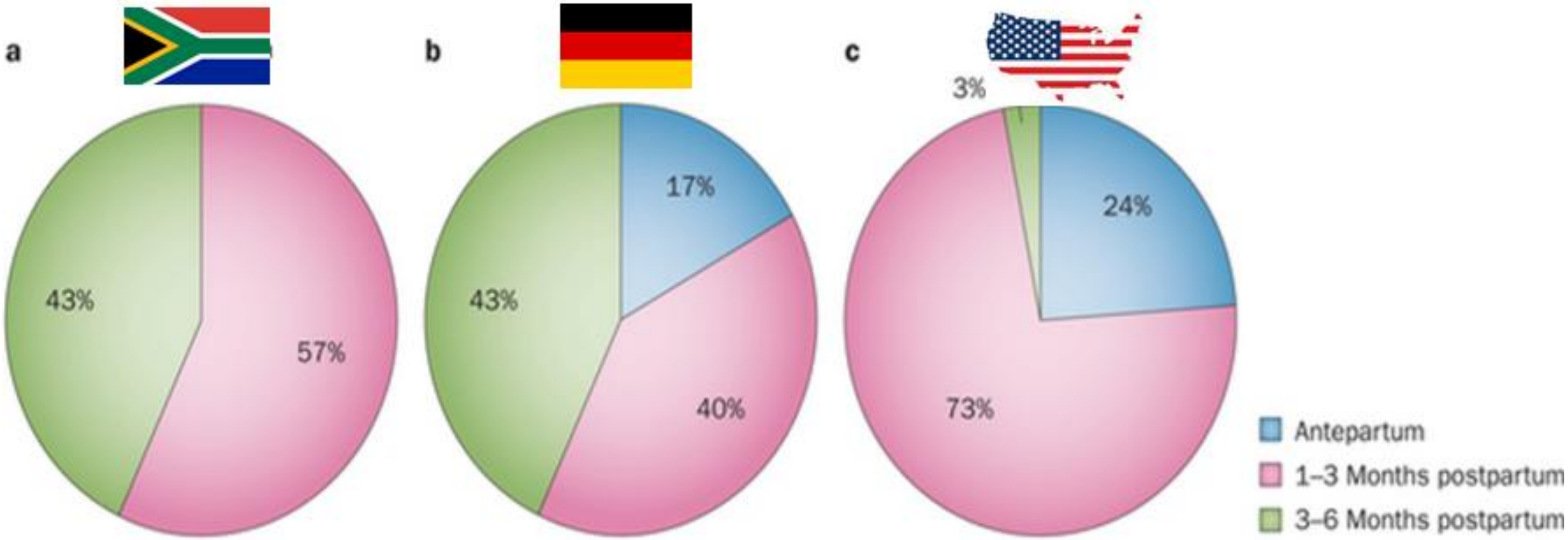
Diagnosis, Prognosis, and Management

Uri Elkayam, MD

Surtout postpartum immédiat

60 %

Figure 1: Time of onset of symptoms of peripartum cardiomyopathy according to country.



Facteurs de risque

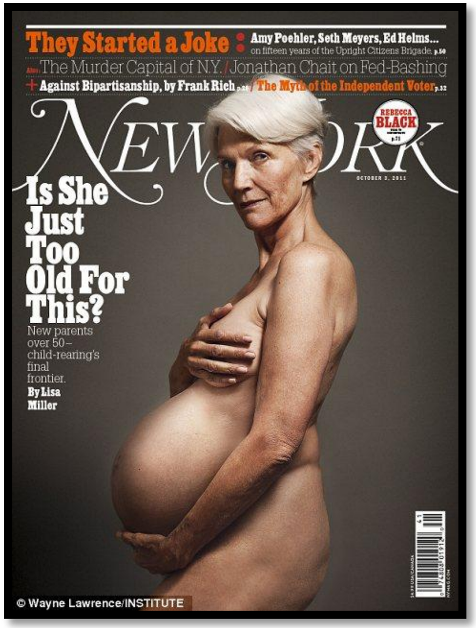
Intensive Care Med (2003) 29:167–174
DOI 10.1007/s00134-002-1583-0

REVIEW

Esther Beus
Walther N. K. A. Mook
Graham Ramsay
Jan L. M. Stappers
Hans W. H. M. Putten

Peripartum cardiomyopathy: a condition intensivists should be aware of

Reported associated condition


They Started a Joke : Amy Poehler, Seth Meyers, Ed Helms... on fifteen years of the Upright Citizens Brigade. p.50
Also: The Murder Capital of N.Y. / Jonathan Chait on Fed-Bashing
+ Against Bipartisanship, by Frank Rich p.26 / The Myth of the Independent Voter p.32
NEW YORK
REBECCA BLACK p.31
OCTOBER 3, 2011
Is She Just Too Old For This?
New parents over 50– child-rearing's final frontier.
By Lisa Miller
© Wayne Lawrence/INSTITUTE

Age

Multiparité

©Jacob Crawford

Africaine

Tocolyse

Intensive Care Med (2003) 29:167–174
DOI 10.1007/s00134-002-1583-0

REVIEW

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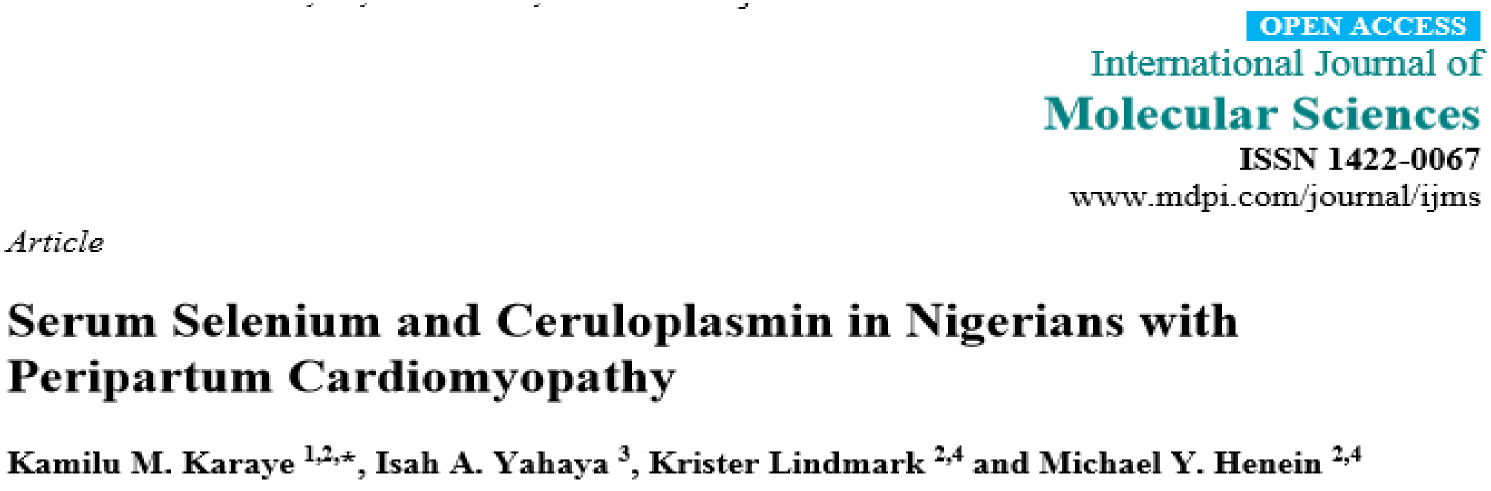
Peripartum cardiomyopathy: a condition intensivists should be aware of

[redacted]



OPEN ACCESS
International Journal of
Molecular Sciences
ISSN 1422-0067
www.mdpi.com/journal/ijms

Article

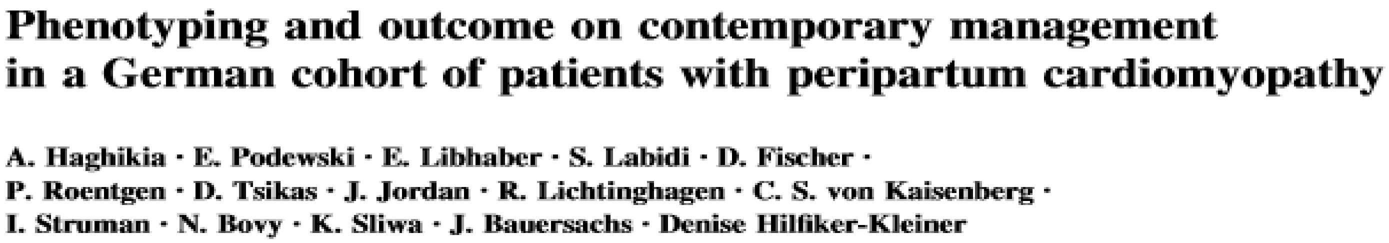
Serum Selenium and Ceruloplasmin in Nigerians with Peripartum Cardiomyopathy

Kamilu M. Karaye [1,2,*], Isah A. Yahaya [3], Krister Lindmark [2,4] and Michael Y. Henein [2,4]

Int. J. Mol. Sci. 2015, 16, 7644-7654

Sélénium

30% sans aucun facteur de risque…



Phenotyping and outcome on contemporary management in a German cohort of patients with peripartum cardiomyopathy

A. Haghikia · E. Podewski · E. Libhaber · S. Labidi · D. Fischer · P. Roentgen · D. Tsikas · J. Jordan · R. Lichtinghagen · C. S. von Kaisenberg · I. Struman · N. Bovy · K. Sliwa · J. Bauersachs · Denise Hilfiker-Kleiner

Cas familiaux

ELSEVIER

International Journal of Cardiology 98 (2005) 179–189

International Journal of Cardiology

www.elsevier.com/locate/ijcard

Review

Pregnancy and the cardiovascular system

Amr E. Abbas[a,*], Steven J. Lester[a], Heidi Connolly[b]

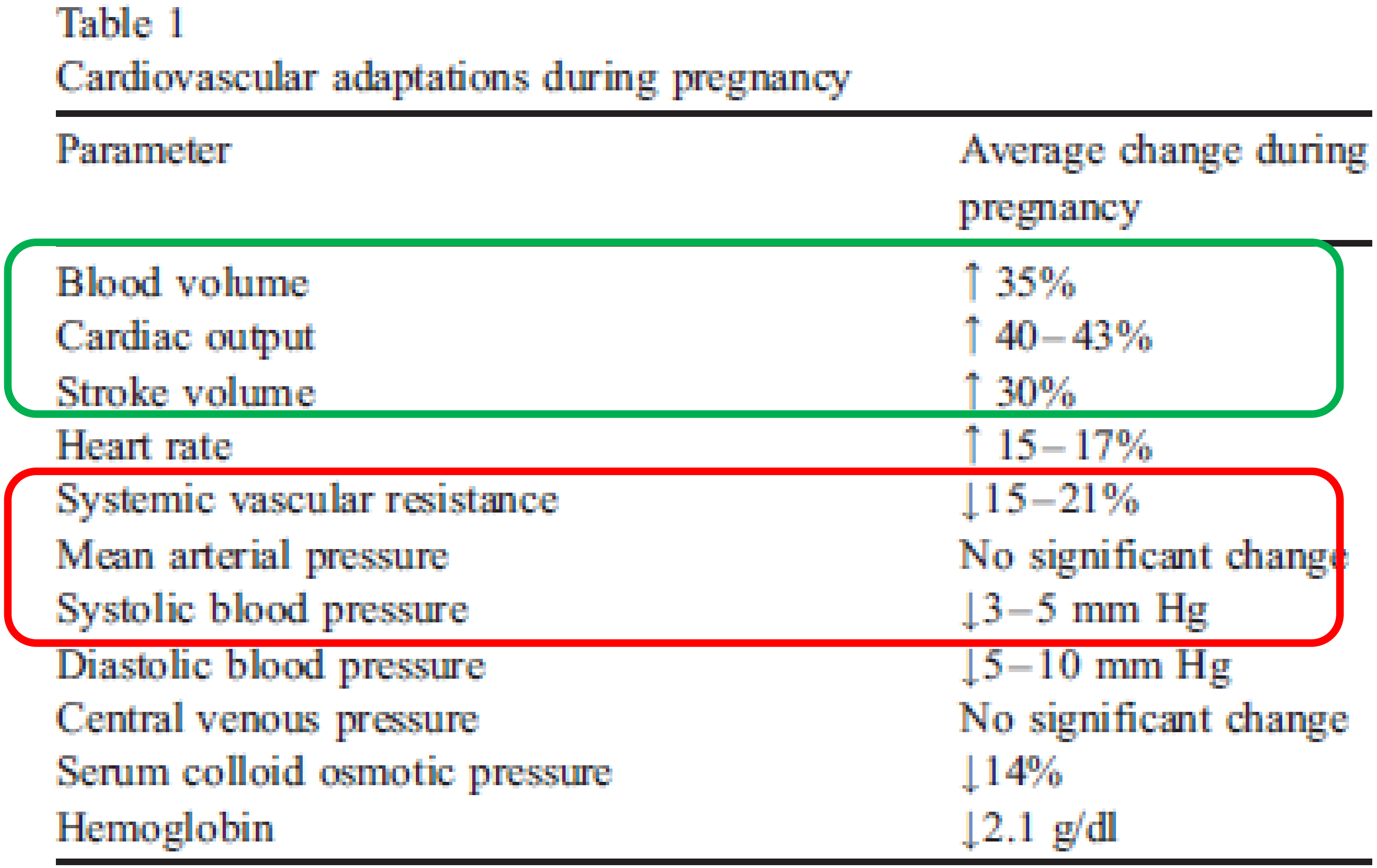


Table 1

Cardiovascular adaptations during pregnancy

Parameter	Average change during pregnancy
Blood volume	↑ 35%
Cardiac output	↑ 40–43%
Stroke volume	↑ 30%
Heart rate	↑ 15–17%
Systemic vascular resistance	↓15–21%
Mean arterial pressure	No significant change
Systolic blood pressure	↓3–5 mm Hg
Diastolic blood pressure	↓5–10 mm Hg
Central venous pressure	No significant change
Serum colloid osmotic pressure	↓14%
Hemoglobin	↓2.1 g/dl

Donc au cours de la grossesse

Reprogrammation

- Hormonale
  - Métabolique
    - Hémodynamique

La question

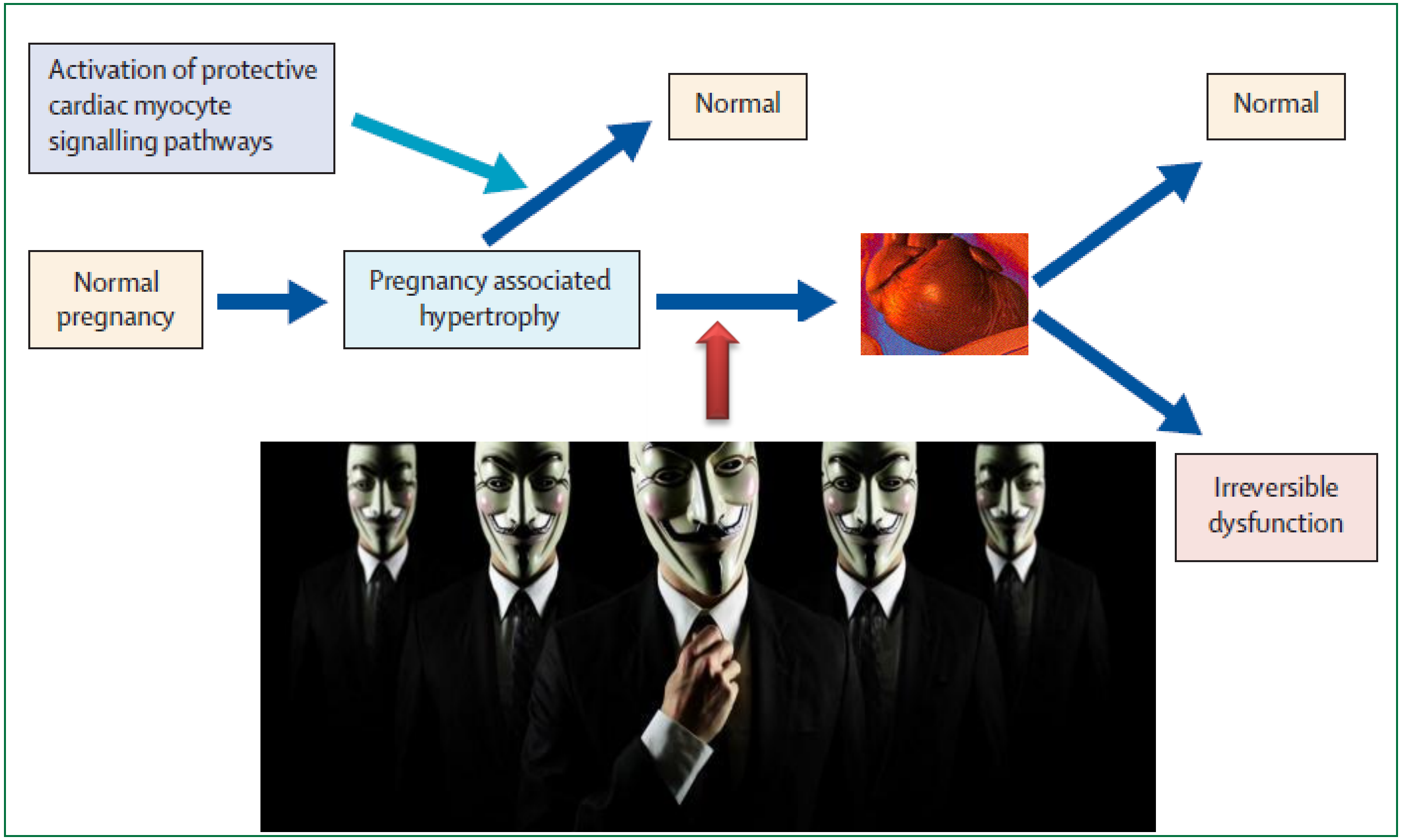
THE LANCET

Seminar

2006

Peripartum cardiomyopathy

Karen Sliwa, James Fett, Uri Elkayam



Activation of protective cardiac myocyte signalling pathways

Normal pregnancy

Pregnancy associated hypertrophy

Normal

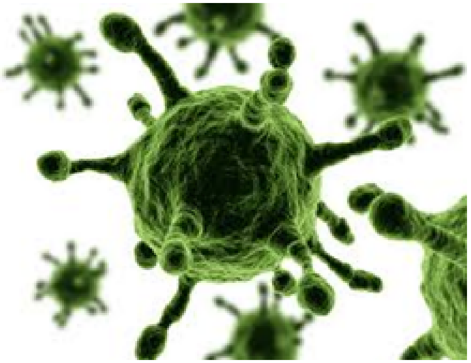
Normal

Irreversible dysfunction

Physiopathologie

- **Hypothèse inflammatoire :**
  - Biopsies myocardique : lésion « myocardite aigue »
  - Perturbation réponse inflammatoire au cours de la grossesse
  - Facteur infectieux initiant/aggravant cette réaction

Inflammation inappropriée : virus+++



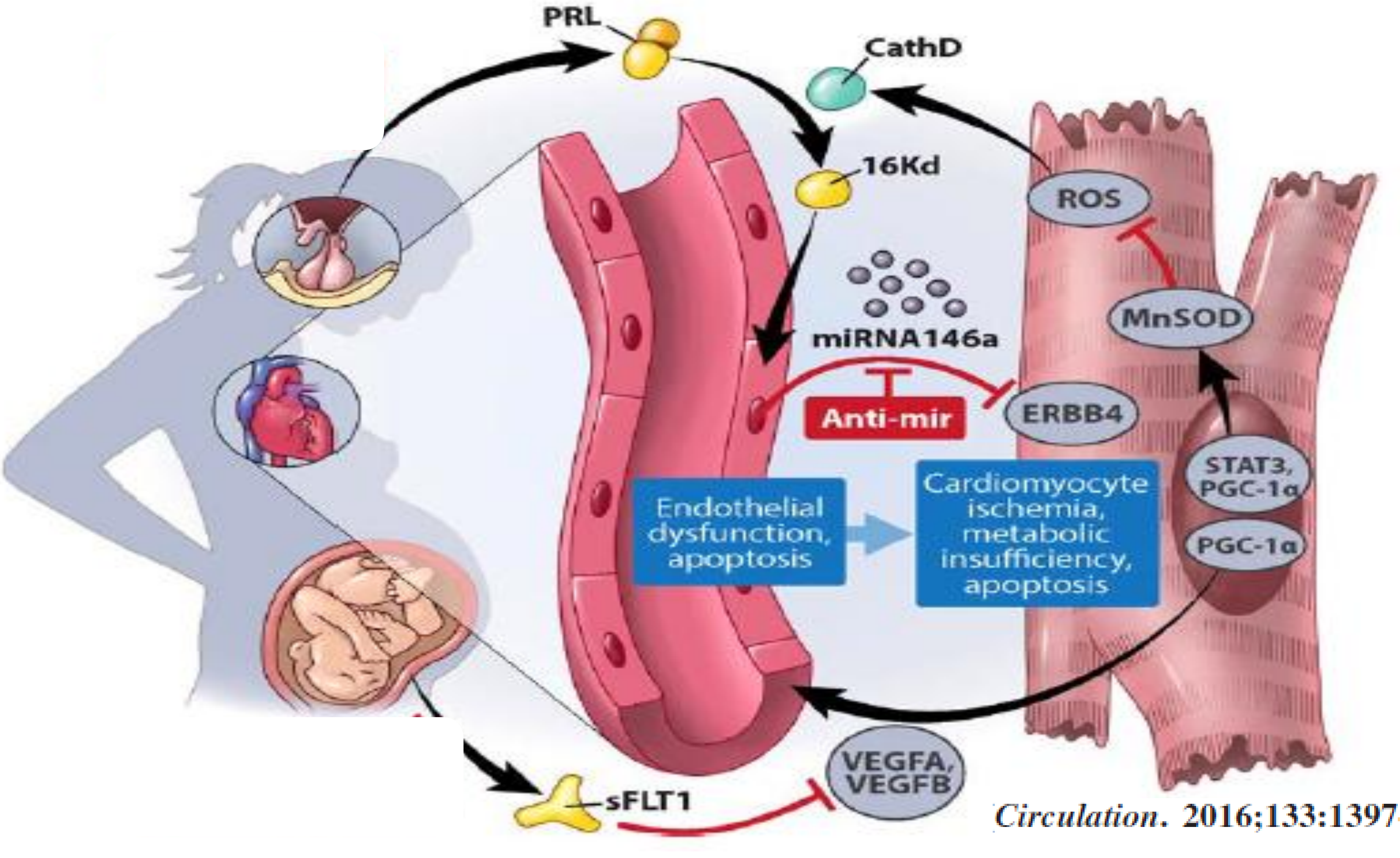
Physiopathologie

- Hypothèse inflammatoire
- Hypothèse Auto-immune
- **Hypothèse Hormonale**
  - **Voie métabolique de la prolactine**

Contemporary Reviews in Cardiovascular Medicine

Peripartum Cardiomyopathy

Zolt Arany, MD, PhD; Uri Elkayam, MD


PRL
CathD
16Kd
ROS
miRNA146a
MnSOD
Anti-mir
ERBB4
STAT3,
PGC-1α
PGC-1α
VEGFA,
VEGFB
sFLT1

Endothelial dysfunction, apoptosis

Cardiomyocyte ischemia, metabolic insufficiency, apoptosis

Circulation. 2016;133:1397-1409

Diagnostic

Spengler
INDEX
ADULTE/ADULT

Présentations cliniques

- **Symptomatologie cardiaque**
  - oedème aigu du poumon
  - troubles du rythme
  - insuffisance C globale
  - embolie artérielle

- **Oxygéno-dependance**
- **Toux persistante**

- **Symptômes « classiques » de la grossesse**
  - asthénie
  - douleurs abdominales
  - dyspnée (anémie)
  - oedèmes

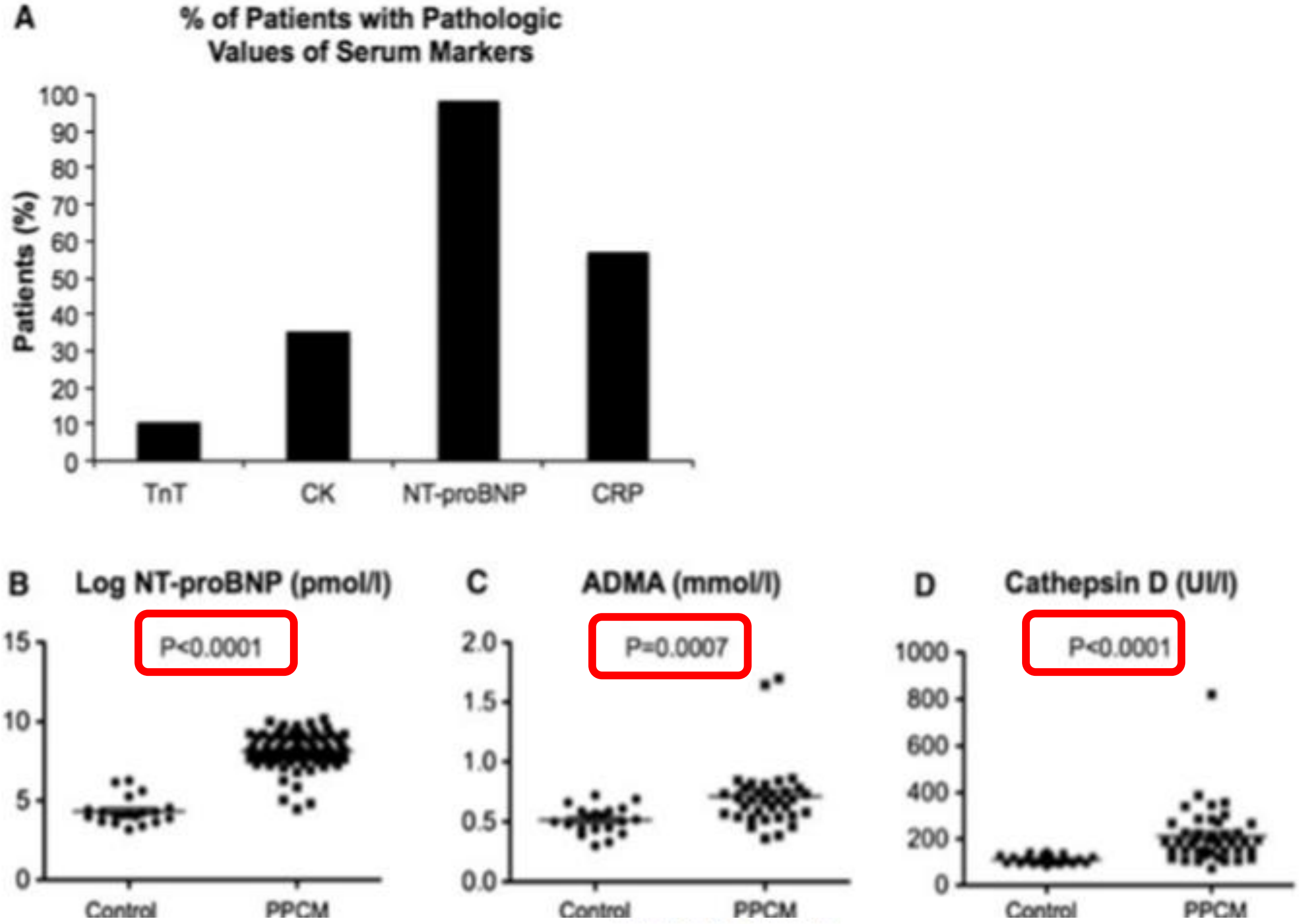
- **Arrêt cardio-respiratoire**

Basic Res Cardiol (2013) 108:366
DOI 10.1007/s00395-013-0366-9

ORIGINAL CONTRIBUTION

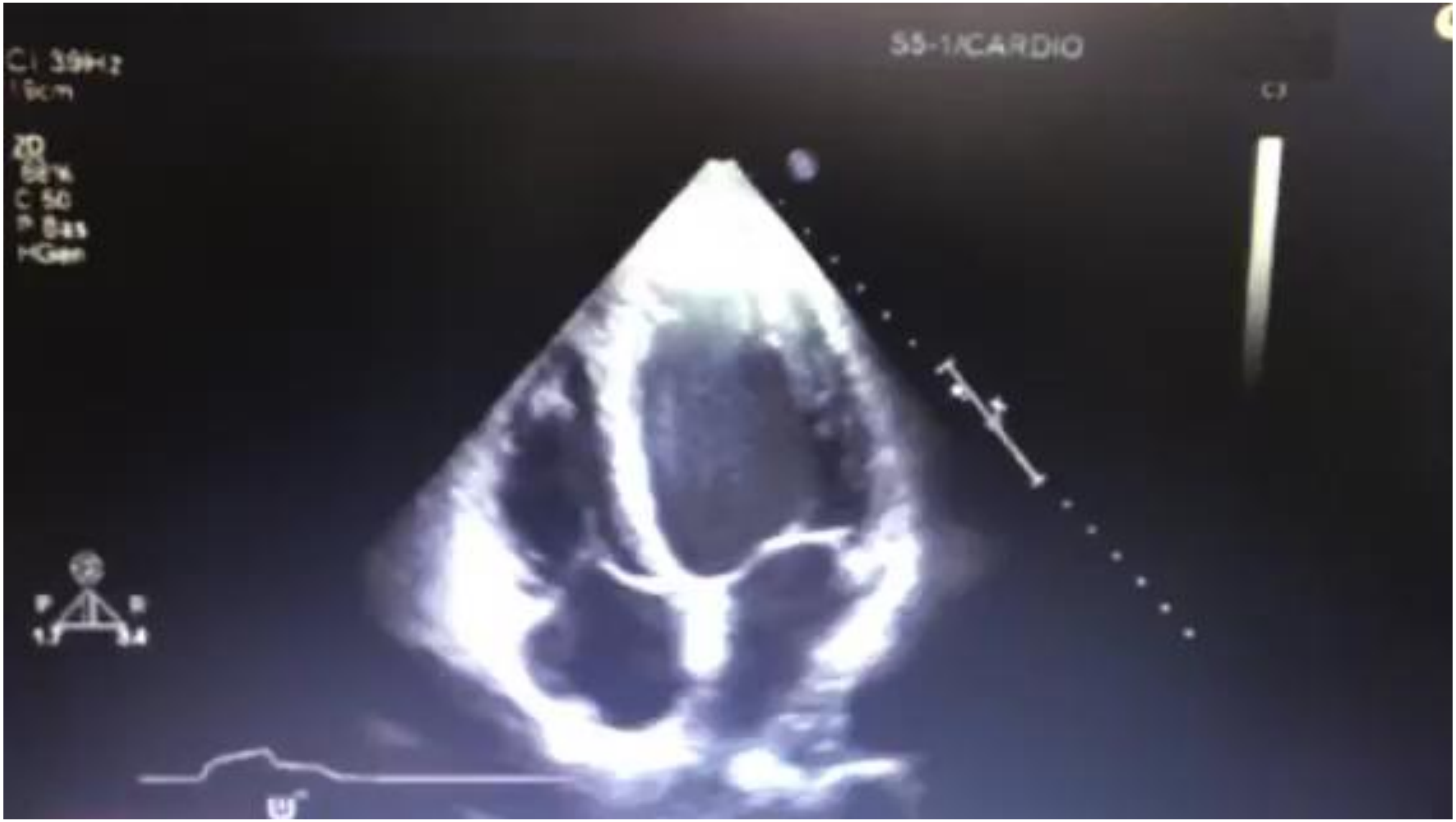
Phenotyping and outcome on contemporary management in a German cohort of patients with peripartum cardiomyopathy

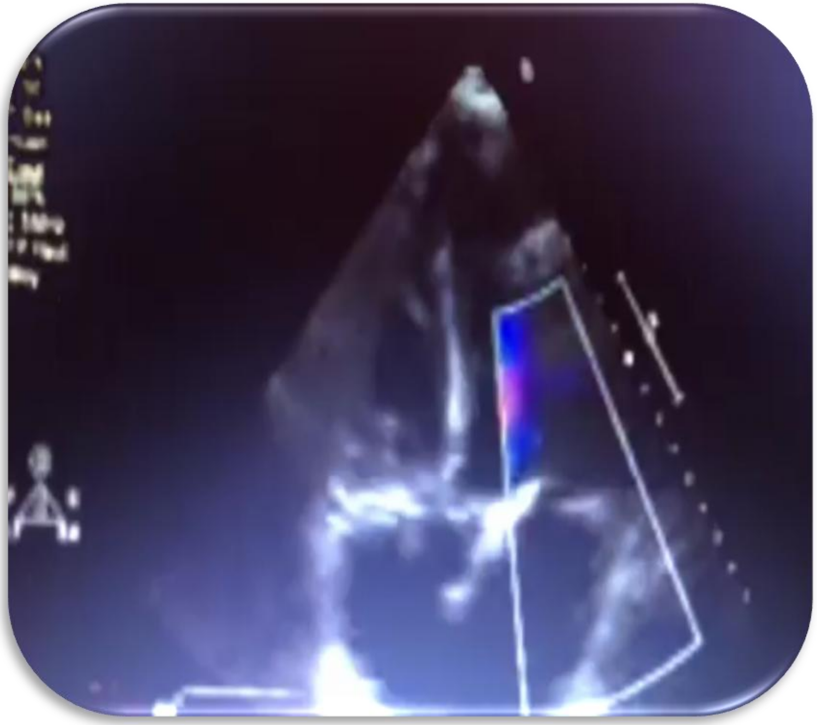
A. Haghikia · E. Podewski · E. Libhaber · S. Labidi · D. Fischer ·
P. Roentgen · D. Tsikas · J. Jordan · R. Lichtinghagen · C. S. von Kaisenberg ·
I. Struman · N. Bovy · K. Sliwa · J. Bauersachs · Denise Hilfiker-Kleiner



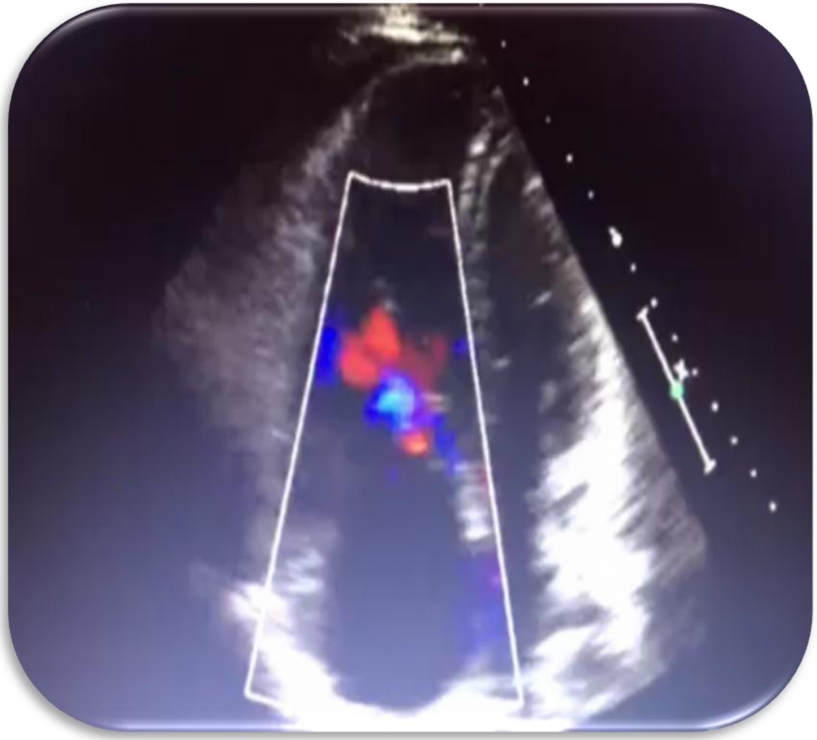
Echo graphie

Hypokinésie - Dilatation

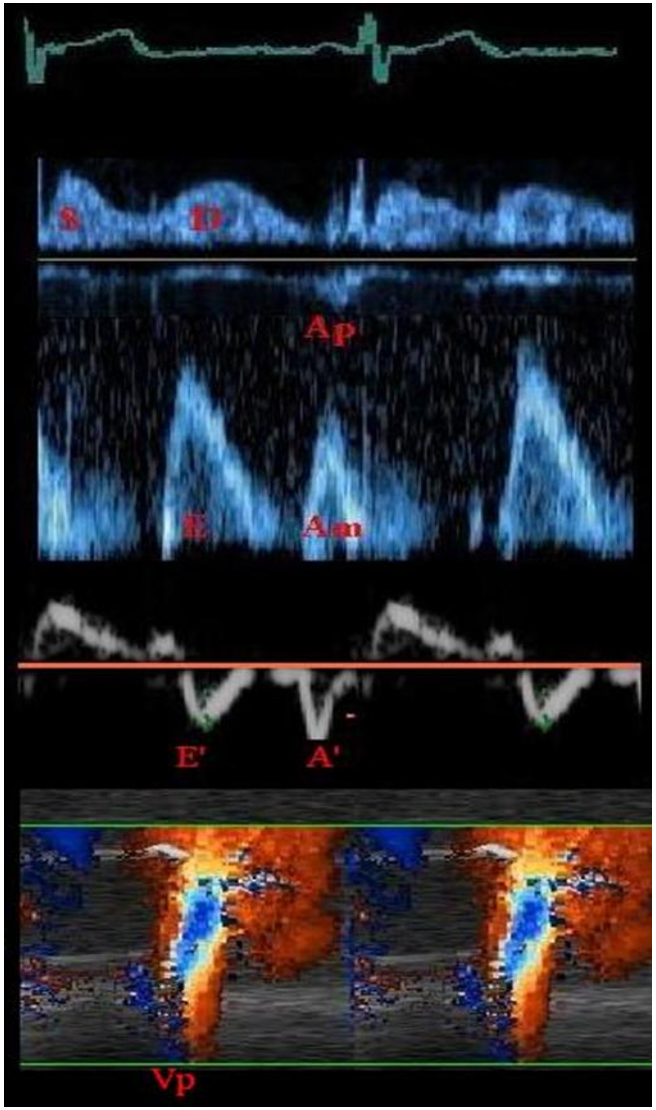

S5-1/CARDIO
2D
C 50
HGen



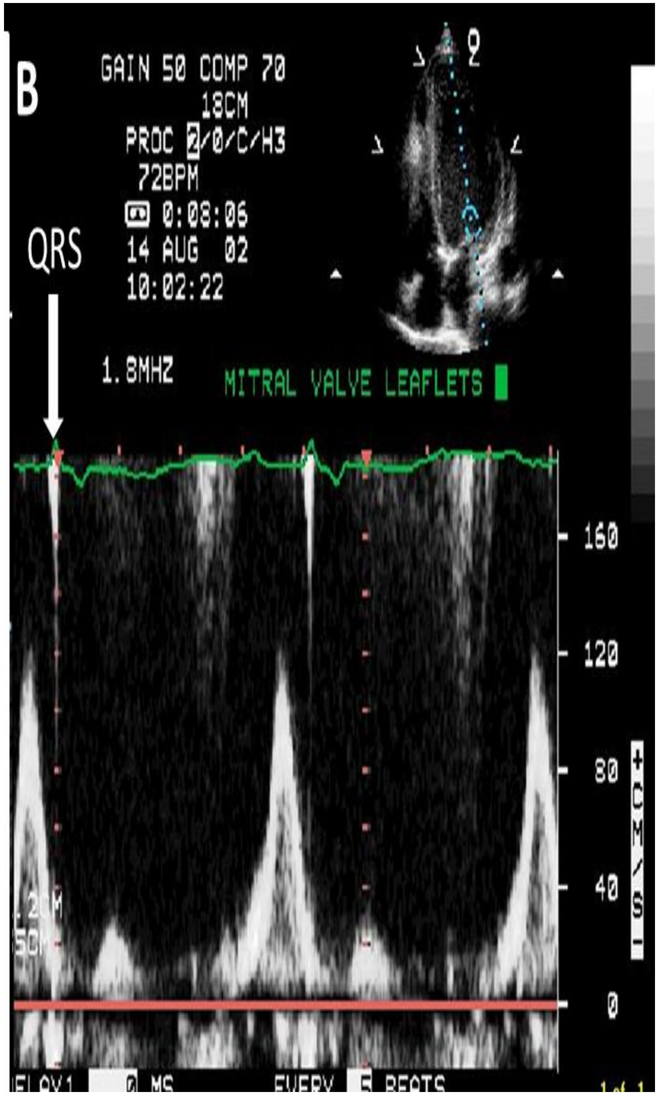
IM



IT

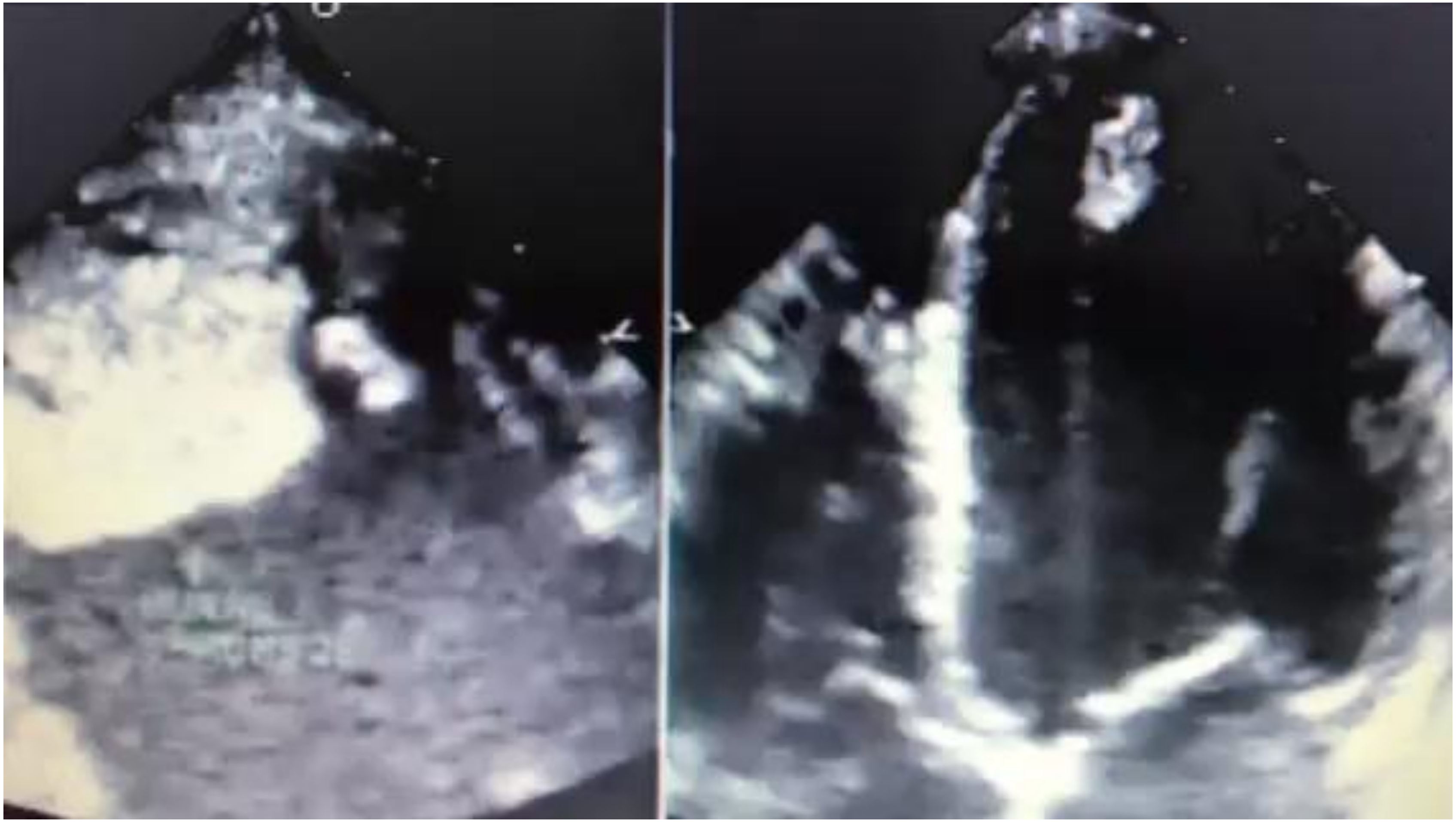

S
D
Ap
E
Am
E'
A'
Vp

↑ **PRG**


B
GAIN 50 COMP 70
18CM
PROC 2/0/C/H3
72BPM
0:03:06
14 AUG 02
10:02:22
QRS
1.8MHZ
MITRAL VALVE LEAFLETS
160
120
80
40
0
+CM/S-

T. compliance

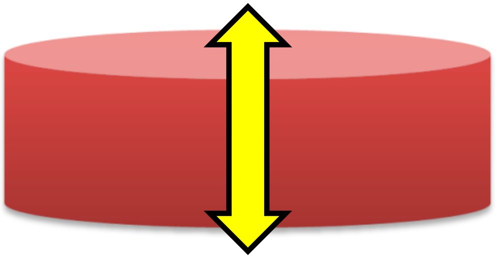
Thrombus VG



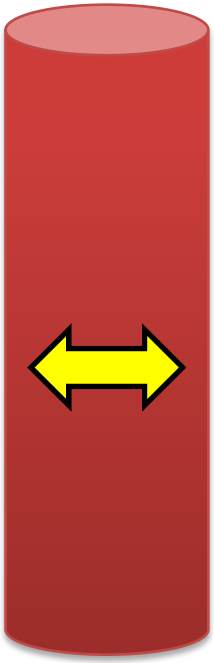
Echocardiographie 2D strain

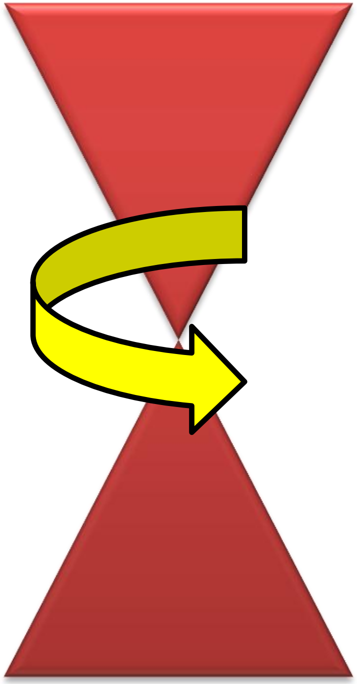
- L’imagerie de *strain* et de *strain rate est* un outil de quantification précise de la fonction et de la contractilité myocardiques.
- Elle analyse le déplacement myocardique par le *tracking* des *speckles* (marqueurs acoustiques naturels) au sein de l’image ultrasonique bidimensionnelle

Echocardiographie 2D-*strain*

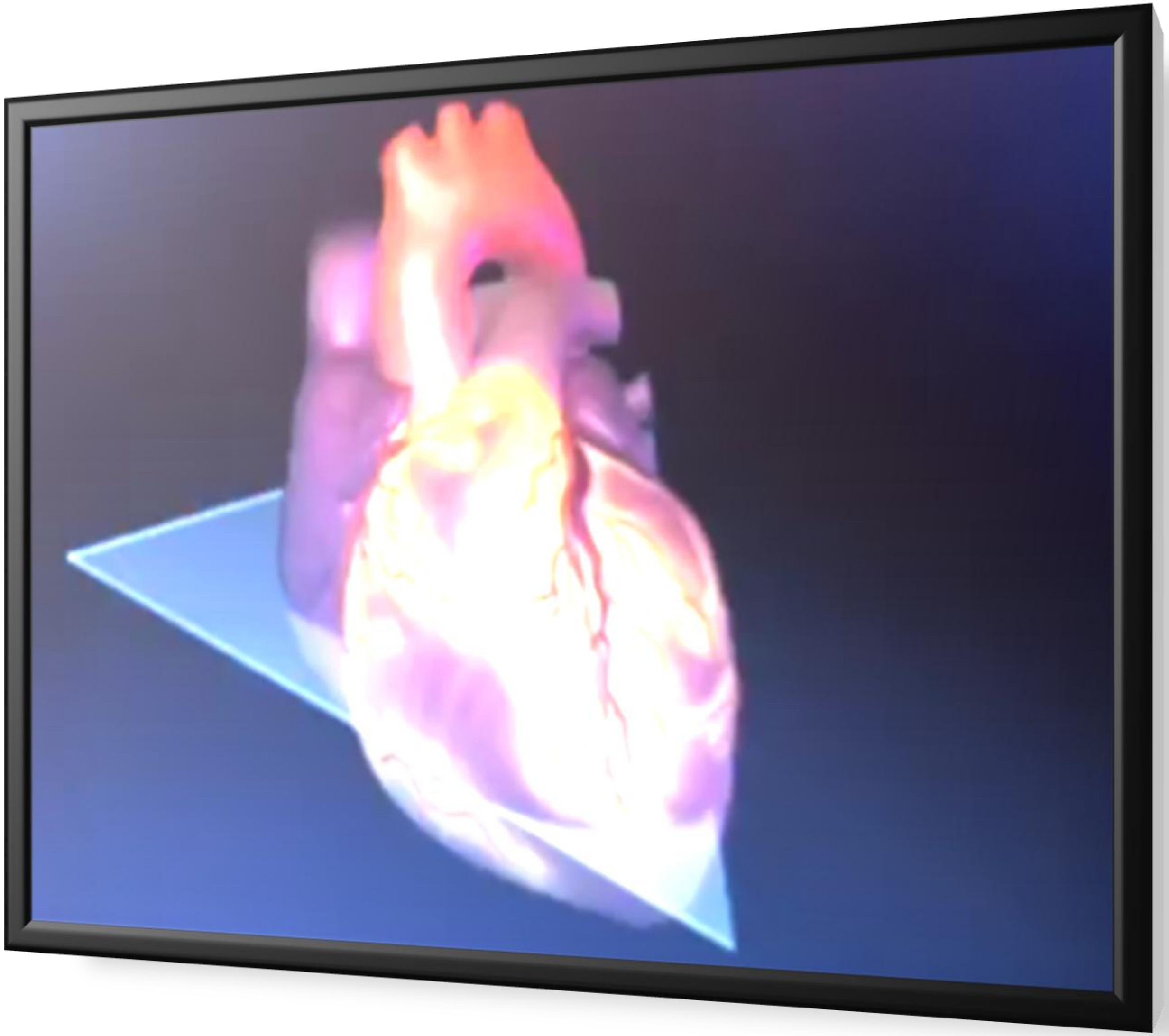


Mouvements du cœur
dans les 3 plans
-hauteur
-largeur
-rotation





Echocardiographie 2D strain

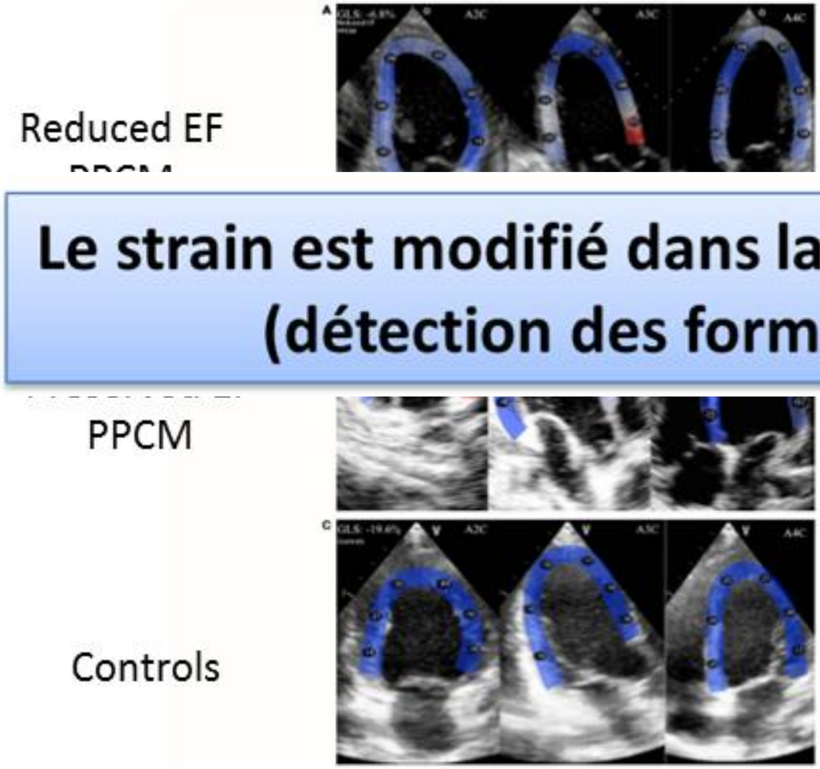


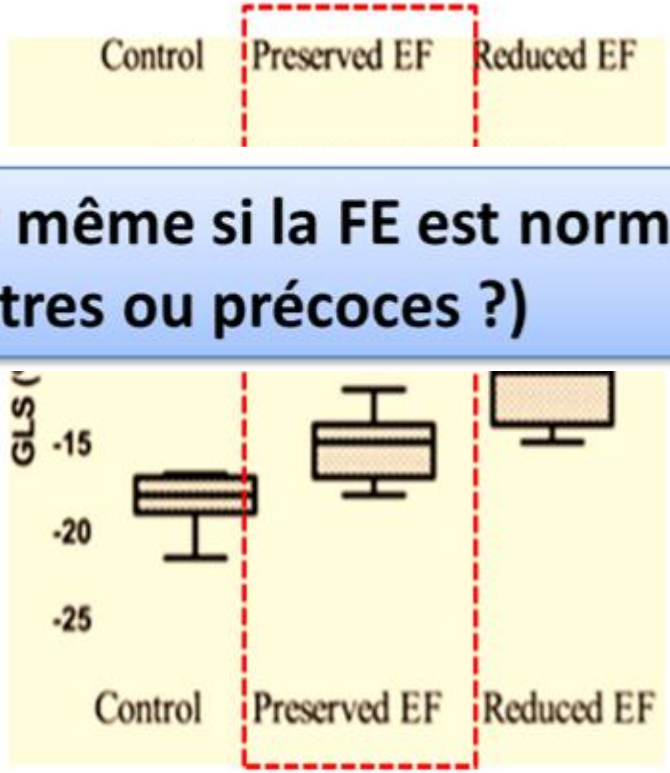
ORIGINAL INVESTIGATION

WILEY **Echocardiography**

Longitudinal systolic strain profiles and outcomes in peripartum cardiomyopathy

Alexandros Briasoulis M.D. | Marian Mocanu M.D. | Karolina Marinescu M.D. | Osama Qaqi M.D. | Mohan Palla M.D. | Tesfaye Telila M.D. | Luis Afonso M.D.


Reduced EF
PPCM
PPCM
Controls
A
GLS: -6.8%
A2C
A3C
A4C
C
GLS: -19.6%
A2C
A3C
A4C

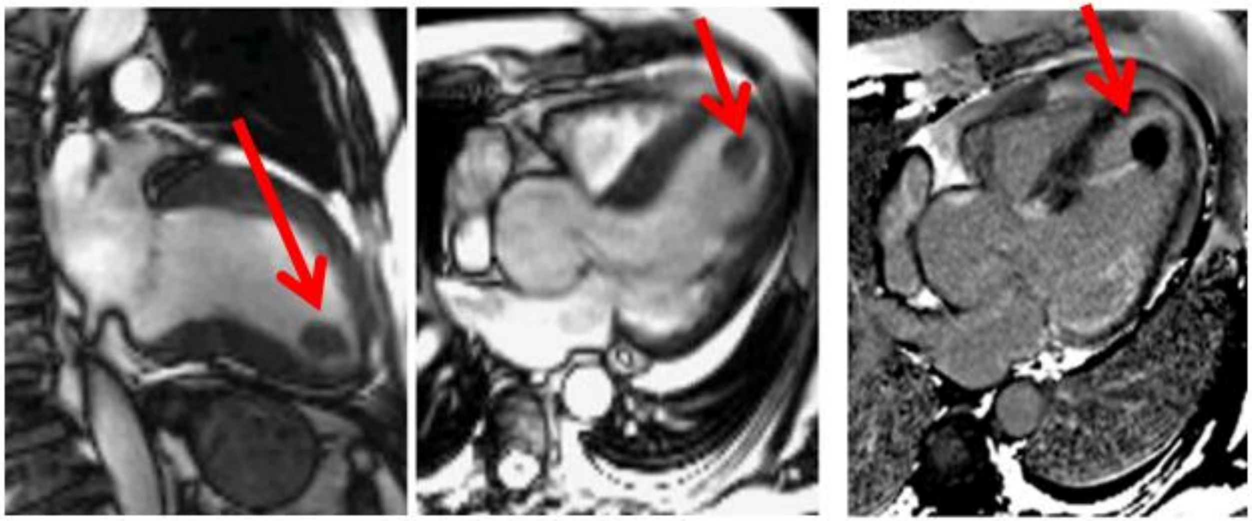


Le strain est modifié dans la MCPP même si la FE est normale (détection des formes frustres ou précoces ?)

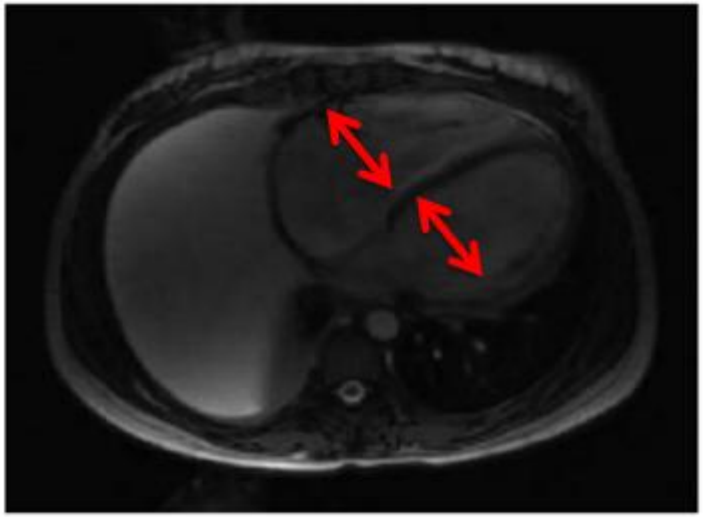
Echocardiography. 2016 Sep;33(9):1354-60.

IRM

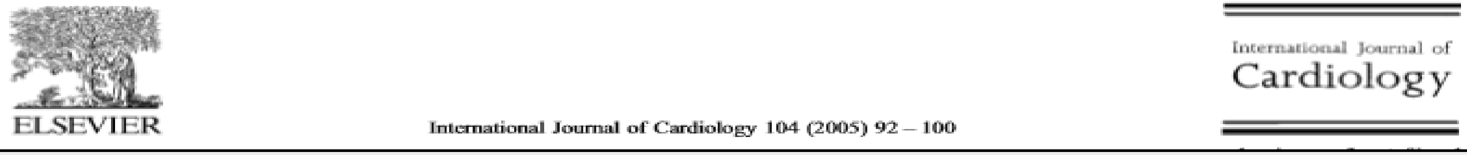
Thrombus



Suivi



Biopsie endomyocardique

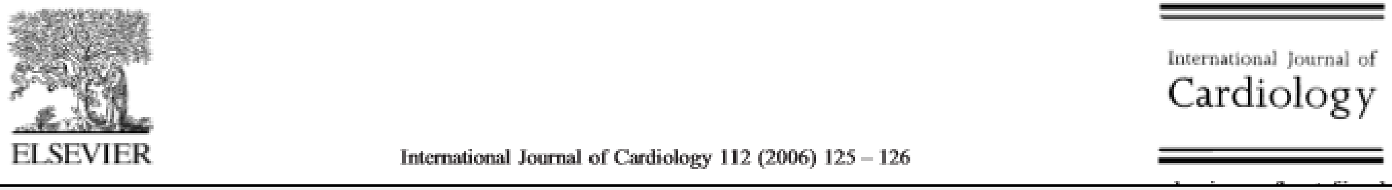


ELSEVIER

International Journal of Cardiology 104 (2005) 92 – 100

International Journal of
Cardiology

“Endomyocardial biopsy may be considered in view of a strong clinical suspicion of myocarditis or no improvement **after 2 weeks** of optimal medical **therapy** for heart failure, especially if malignant ventricular **arrhythmia**s are present and the diagnosis of giant cell myocarditis is being considered. Cardiac **MRI** can be a useful technique to **guide site of biopsy** to improve the diagnostic yield”



ELSEVIER

International Journal of Cardiology 112 (2006) 125 – 126

International Journal of
Cardiology

Selon le moment pendant lequel on réalise la biopsie dans l’histoire de la maladie ou suivant l’endroit où il est effectué, les résultats histologiques sont très variables!!

James D. Fett

Diagnostics différentiels

☐ oui
☐ non
☐ peut-être

European Journal of
Heart Failure
Journal of the Heart Failure Association of the ESC

Diagnostics différentiels

EUROPEAN SOCIETY OF CARDIOLOGY®

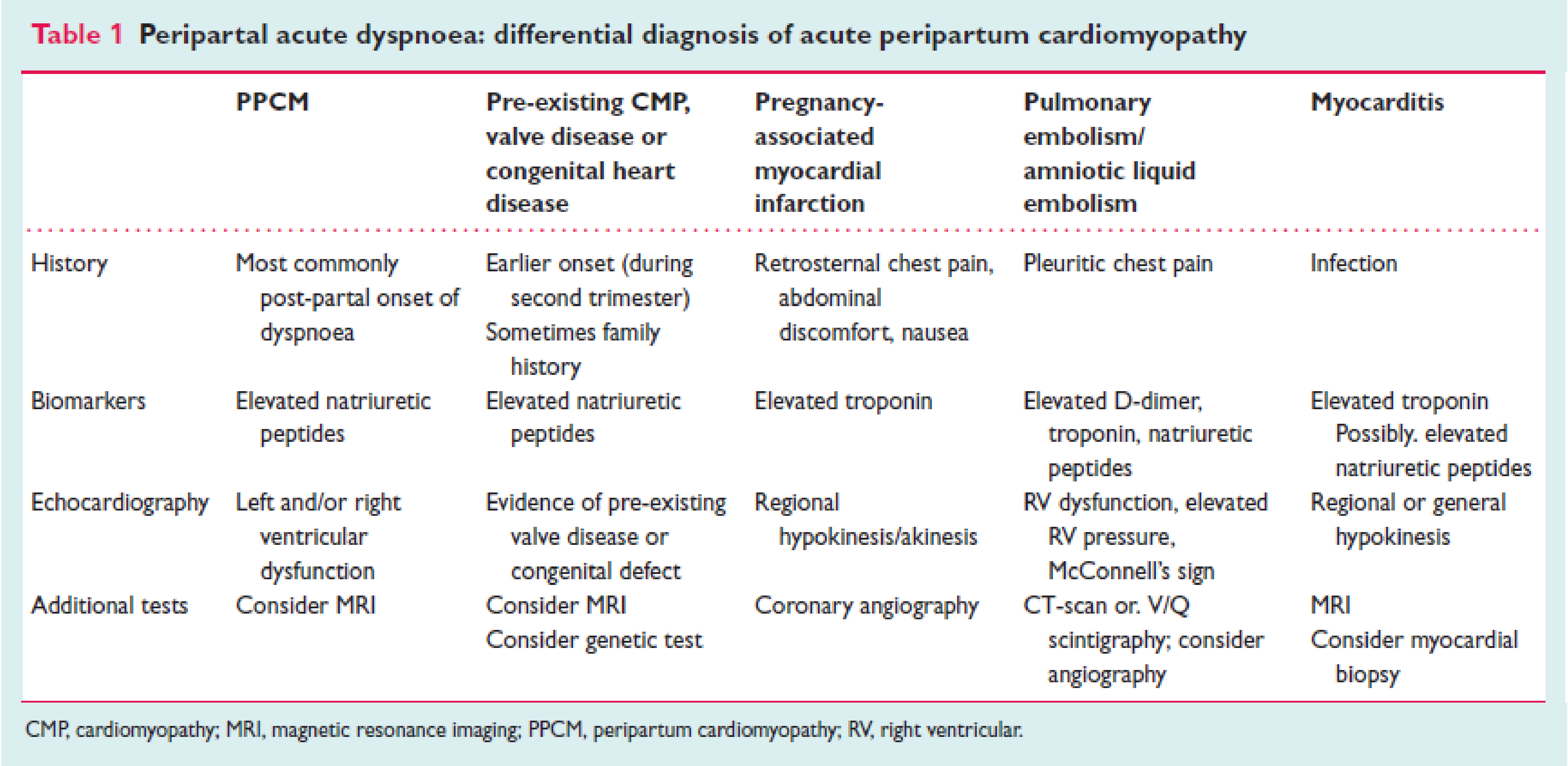


Table 1 **Peripartal acute dyspnoea: differential diagnosis of acute peripartum cardiomyopathy**

	PPCM	**Pre-existing CMP, valve disease or congenital heart disease**	**Pregnancy-associated myocardial infarction**	**Pulmonary embolism/ amniotic liquid embolism**	**Myocarditis**
History	Most commonly post-partal onset of dyspnoea	Earlier onset (during second trimester) Sometimes family history	Retrosternal chest pain, abdominal discomfort, nausea	Pleuritic chest pain	Infection
Biomarkers	Elevated natriuretic peptides	Elevated natriuretic peptides	Elevated troponin	Elevated D-dimer, troponin, natriuretic peptides	Elevated troponin Possibly. elevated natriuretic peptides
Echocardiography	Left and/or right ventricular dysfunction	Evidence of pre-existing valve disease or congenital defect	Regional hypokinesis/akinesis	RV dysfunction, elevated RV pressure, McConnell's sign	Regional or general hypokinesis
Additional tests	Consider MRI	Consider MRI Consider genetic test	Coronary angiography	CT-scan or. V/Q scintigraphy; consider angiography	MRI Consider myocardial biopsy

CMP, cardiomyopathy; MRI, magnetic resonance imaging; PPCM, peripartum cardiomyopathy; RV, right ventricular.

Thyrotoxicose – Sepsis

European Journal of Heart Failure 2016

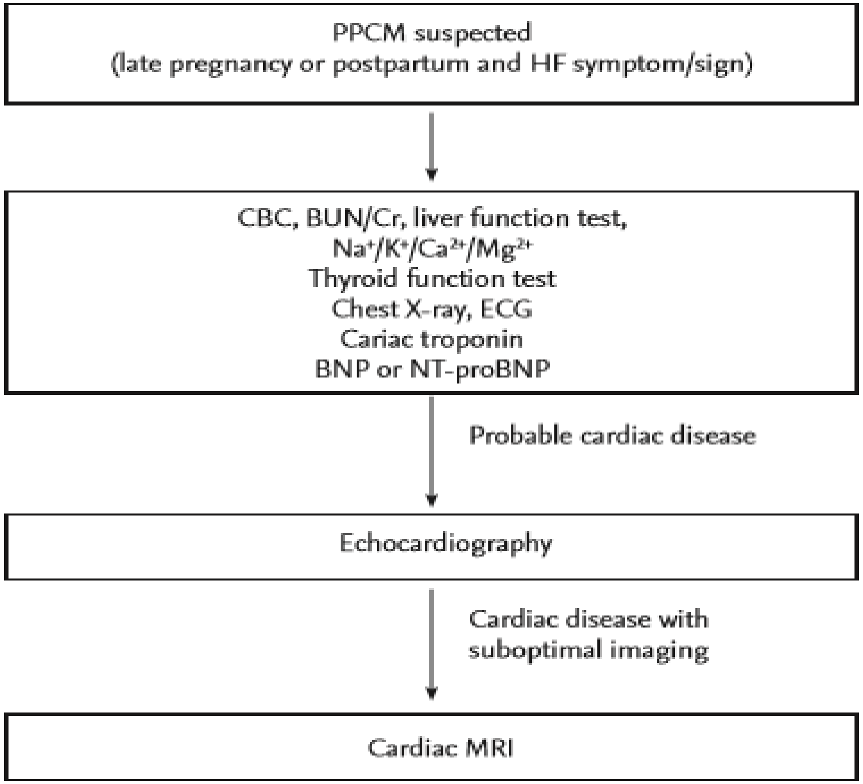
REVIEW
Korean J Intern Med 2017;32:393-403
https://doi.org/10.3904/kjim.2016.360

Check for updates
KJIM

Practical management of peripartum cardiomyopathy

Mi-Jeong Kim[1] and Mi-Seung Shin[2]

Flow chart for suspected peripartum cardiomyopathy



PPCM suspected
(late pregnancy or postpartum and HF symptom/sign)

CBC, BUN/Cr, liver function test,
Na$^+$/K$^+$/Ca^{2+}/Mg^{2+}
Thyroid function test
Chest X-ray, ECG
Cariac troponin
BNP or NT-proBNP

Probable cardiac disease

Echocardiography

Cardiac disease with
suboptimal imaging

Cardiac MRI

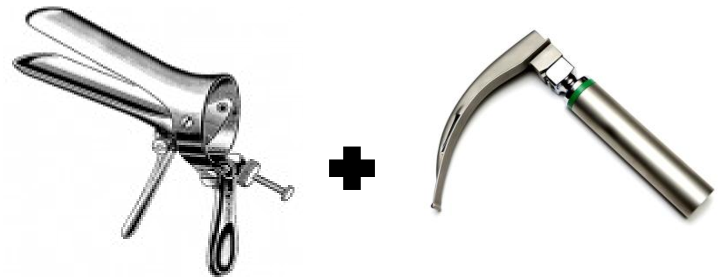
K J Intern Med 2017;32:393-403

Prise en charge 2017

Pas de traitement spécifique

Prise en charge

Défaillance cardiaque



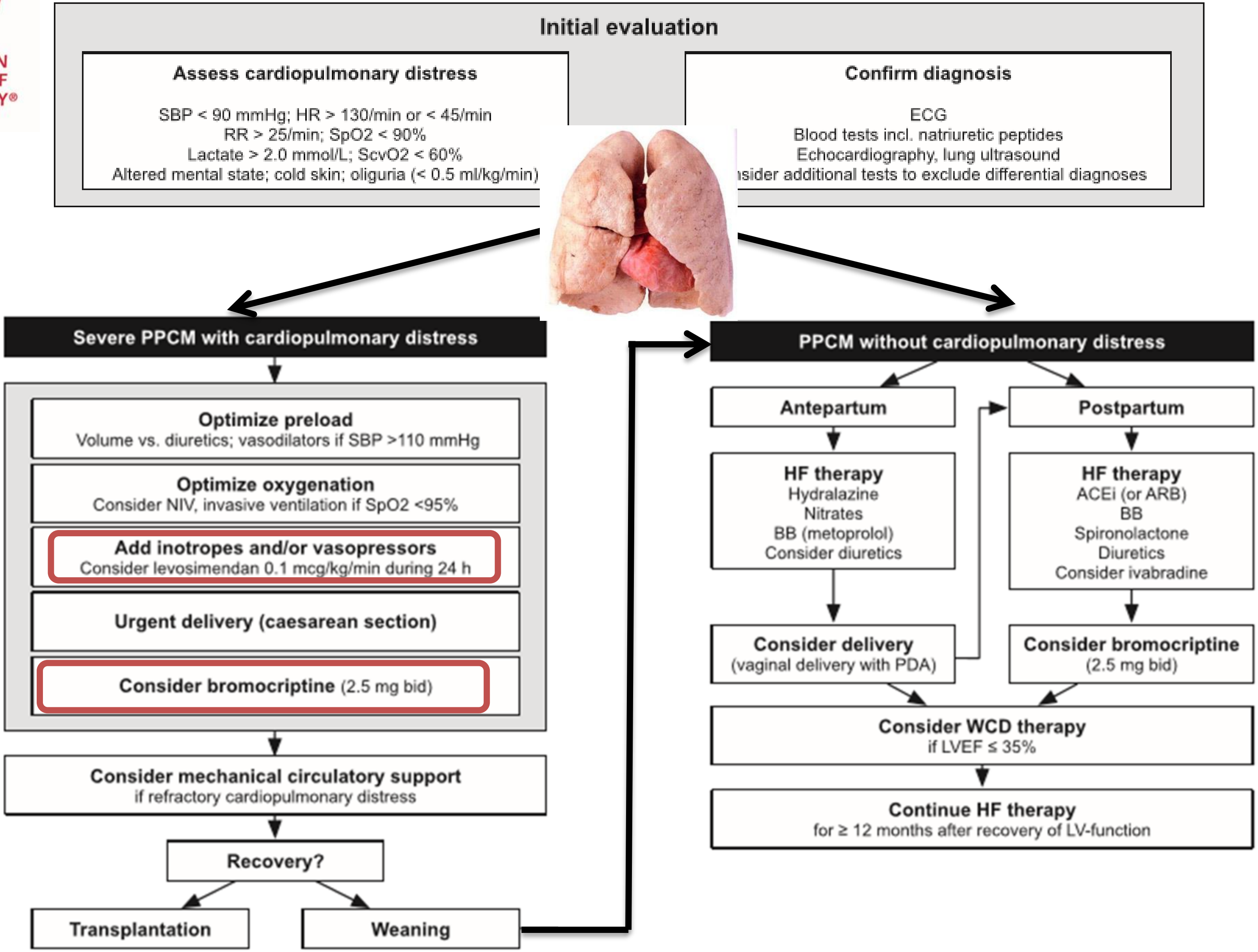
Don't
FORGET!

Traitements de l’insuffisance cardiaque durant la grossesse

Traitements autorisés	Traitements contre-indiqués
Digoxine	IEC/ARA II
Dérivés nitrés	Amiodarone
Héparine	Antivitamines K
Diurétiques	
Bêtabloquants	
Dobutamine	
Dopamine	

EUROPEAN SOCIETY OF CARDIOLOGY®

2016



Initial evaluation

Assess cardiopulmonary distress

SBP < 90 mmHg; HR > 130/min or < 45/min
RR > 25/min; SpO2 < 90%
Lactate > 2.0 mmol/L; ScvO2 < 60%
Altered mental state; cold skin; oliguria (< 0.5 ml/kg/min)

Confirm diagnosis

ECG
Blood tests incl. natriuretic peptides
Echocardiography, lung ultrasound
nsider additional tests to exclude differential diagnoses

Severe PPCM with cardiopulmonary distress

Optimize preload
Volume vs. diuretics; vasodilators if SBP >110 mmHg

Optimize oxygenation
Consider NIV, invasive ventilation if SpO2 <95%

Add inotropes and/or vasopressors
Consider levosimendan 0.1 mcg/kg/min during 24 h

Urgent delivery (caesarean section)

Consider bromocriptine (2.5 mg bid)

Consider mechanical circulatory support
if refractory cardiopulmonary distress

Recovery?

Transplantation

Weaning

PPCM without cardiopulmonary distress

Antepartum

HF therapy
Hydralazine
Nitrates
BB (metoprolol)
Consider diuretics

Consider delivery
(vaginal delivery with PDA)

Postpartum

HF therapy
ACEi (or ARB)
BB
Spironolactone
Diuretics
Consider ivabradine

Consider bromocriptine
(2.5 mg bid)

Consider WCD therapy
if LVEF ≤ 35%

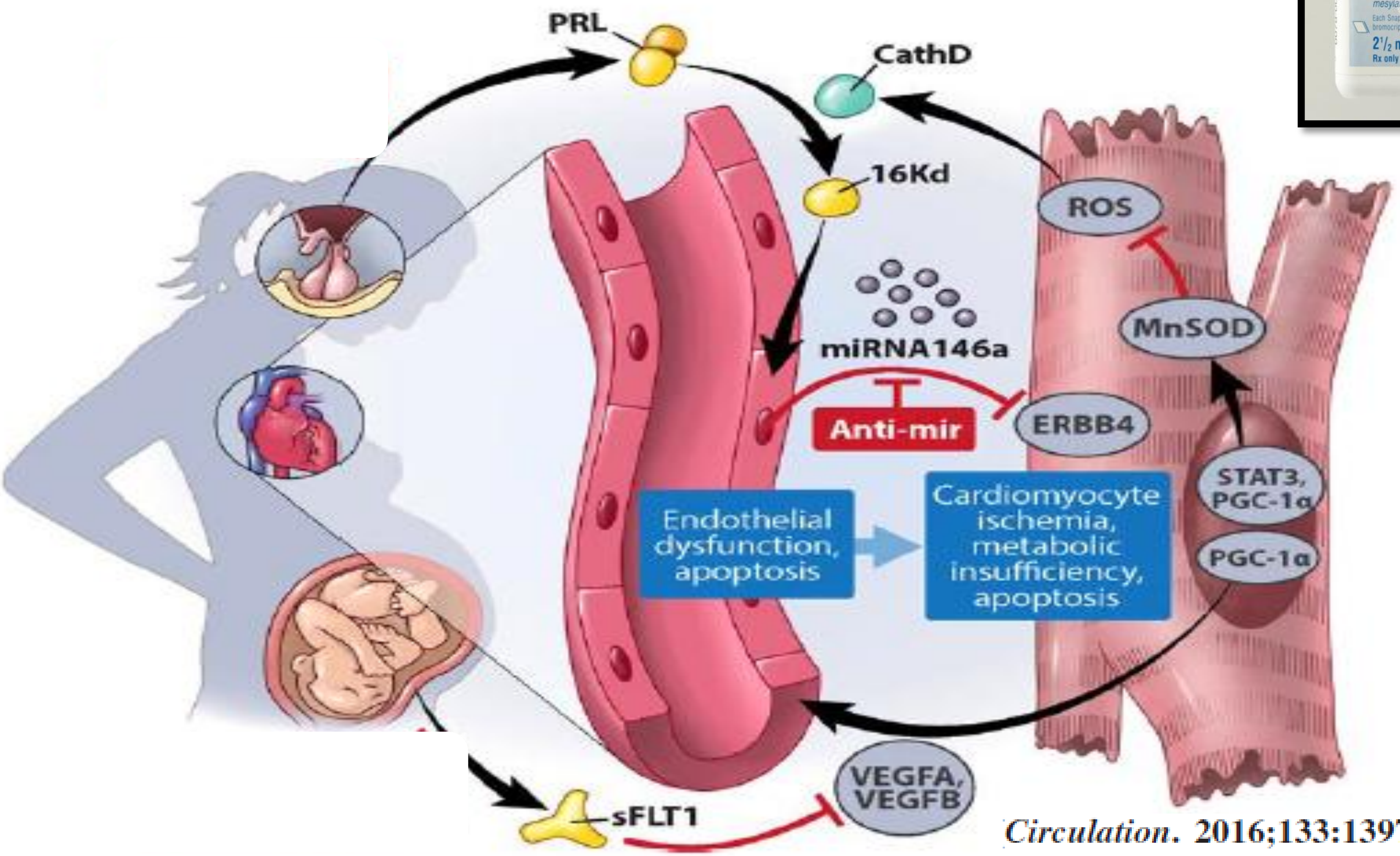
Continue HF therapy
for ≥ 12 months after recovery of LV-function

Contemporary Reviews in Cardiovascular Medicine

NOVARTIS
Parlodel®
(bromocriptine mesylate) tablets, USP
2½ mg
100 SnapTabs®
Rx only

Peripartum Cardiomyopathy

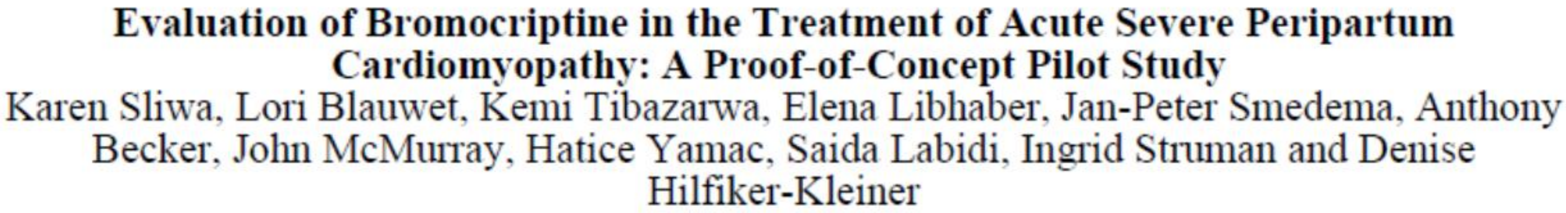
Zolt Arany, MD, PhD; Uri Elkayam, MD


PRL
CathD
16Kd
ROS
miRNA146a
MnSOD
Anti-mir
ERBB4
STAT3, PGC-1α
PGC-1α
Endothelial dysfunction, apoptosis
Cardiomyocyte ischemia, metabolic insufficiency, apoptosis
VEGFA, VEGFB
sFLT1

Circulation. 2016;133:1397-1409

Circulation
JOURNAL OF THE AMERICAN HEART ASSOCIATION

American Heart Association



Evaluation of Bromocriptine in the Treatment of Acute Severe Peripartum Cardiomyopathy: A Proof-of-Concept Pilot Study

Karen Sliwa, Lori Blauwet, Kemi Tibazarwa, Elena Libhaber, Jan-Peter Smedema, Anthony Becker, John McMurray, Hatice Yamac, Saida Labidi, Ingrid Struman and Denise Hilfiker-Kleiner

- 20 patientes avec CMPP récente et FEVG < 35%
- Randomisées bromocriptine (5 mg/24h 2 semaines puis 2,5 mg/24h 6 semaines) vs pas de ttt
- End-point: Décès / NYHA III-IV / FEVG < 35% à 6 mois

Circulation 2010

Limites Bromocriptine

- Pas d’allaitement → dénutrition nourrisson ?

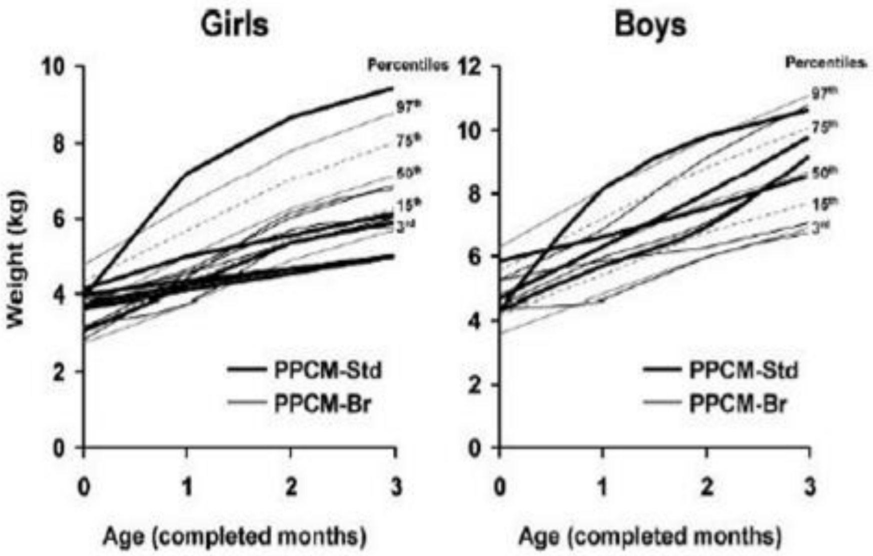


Figure 5. Growth and survival of children of PPCM study mothers from birth to 3 months plotted on World Health Organization growth charts.

Sliwa, Circulation, 2010

- Risque nécrose myocardique ?

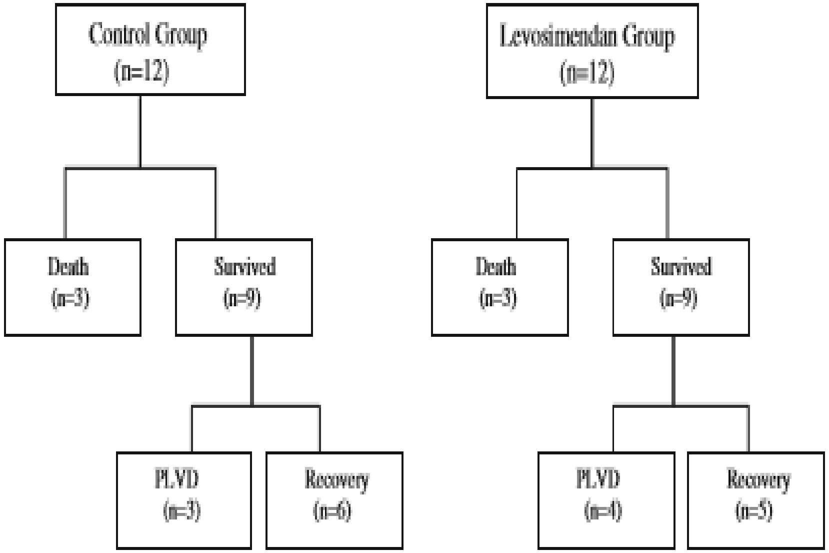
James, JACC, 2010

Clin Res Cardiol (2011) 100:571–577
DOI 10.1007/s00392-010-0279-7

ORIGINAL PAPER

Effect of levosimendan and predictors of recovery in patients with peripartum cardiomyopathy, a randomized clinical trial

Murat Biteker · Nilüfer Ekşi Duran · Hasan Kaya · Sabahattin Gündüz · Halil İbrahim Tanboğa · Tayyar Gökdeniz · Gökhan Kahveci · Taylan Akgün · Mustafa Yıldız · Mehmet Özkan



Control Group (n=12)

Death (n=3)

Survived (n=9)

PLVD (n=3)

Recovery (n=6)

Levosimendan Group (n=12)

Death (n=3)

Survived (n=9)

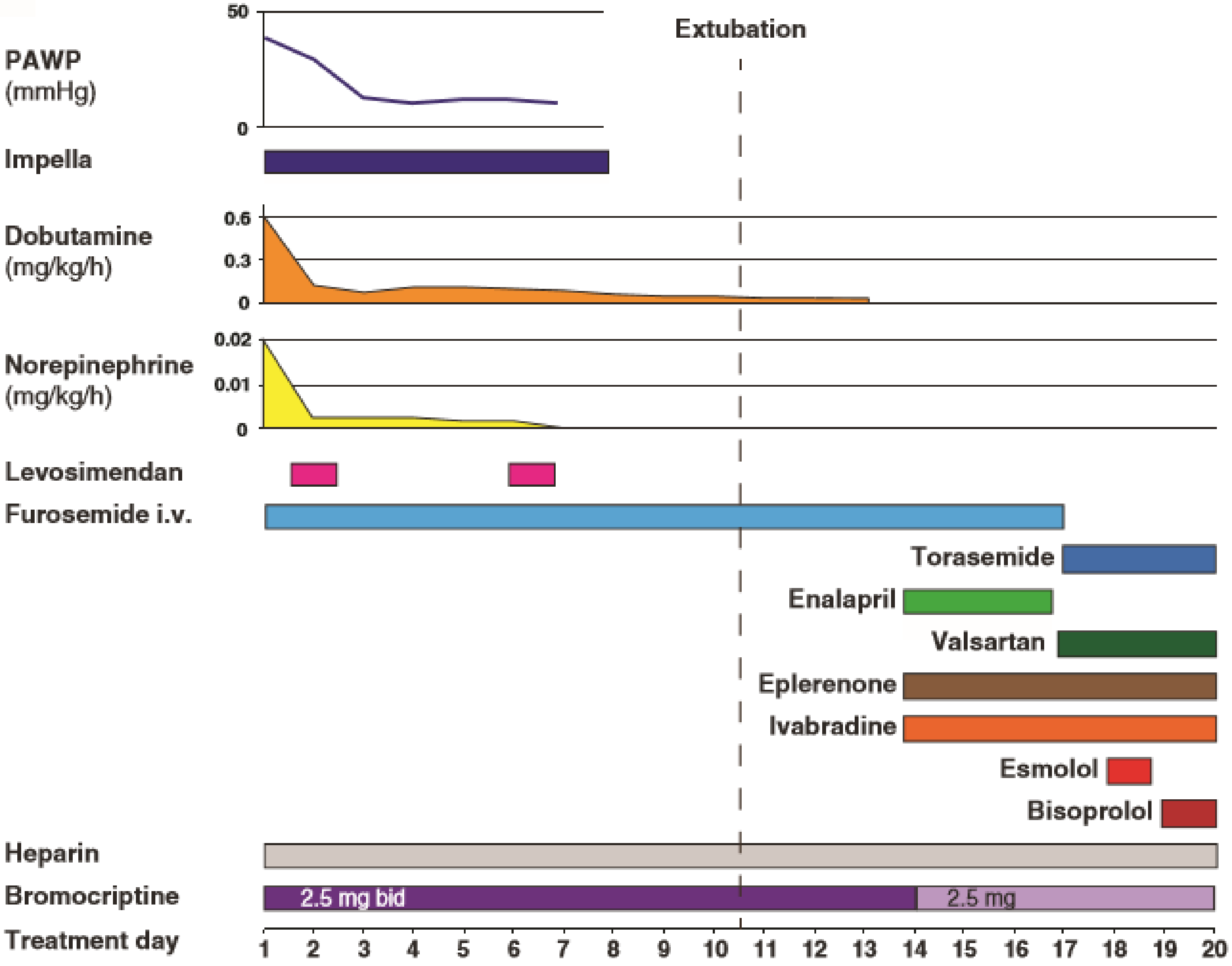
PLVD (n=4)

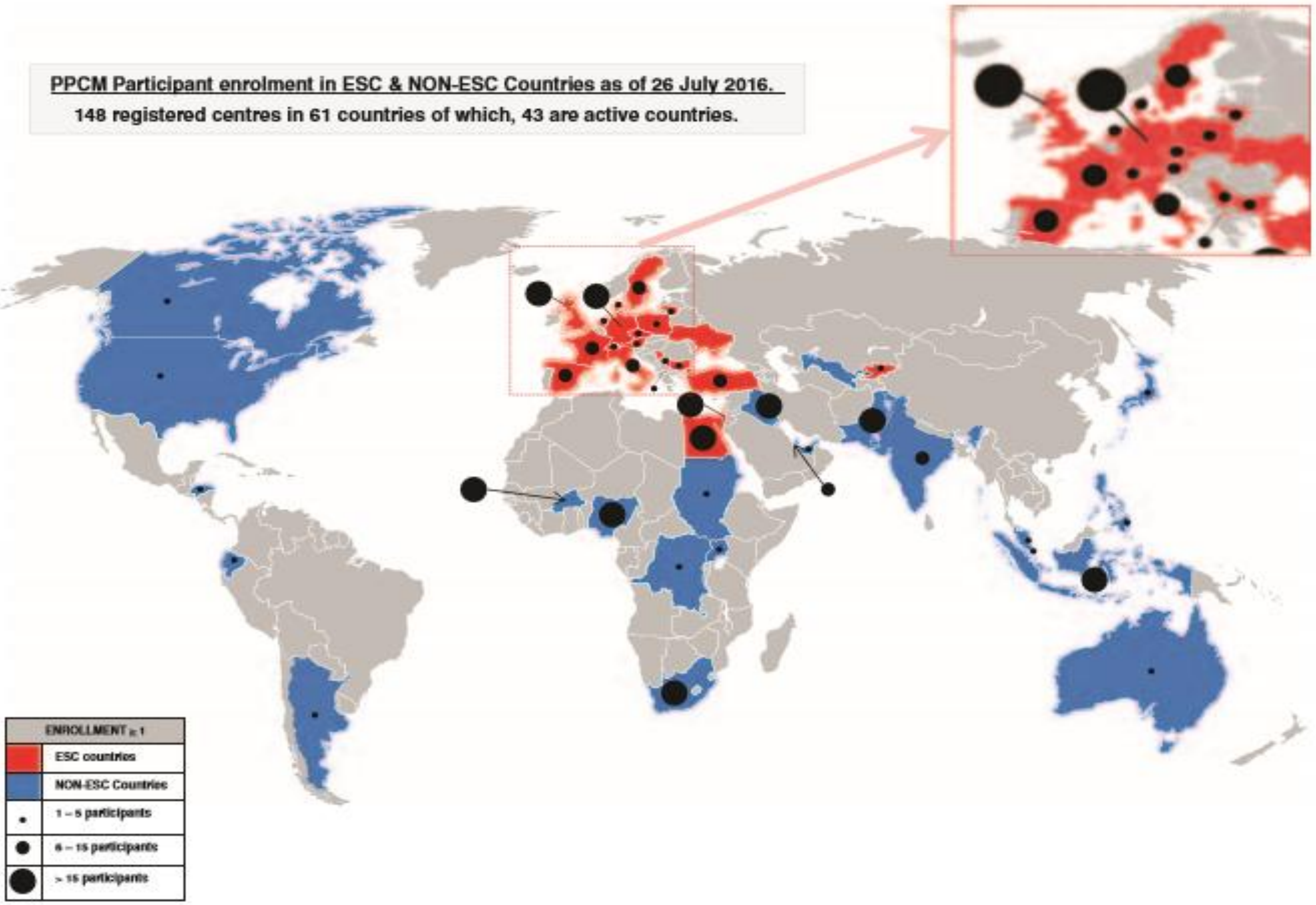
Recovery (n=5)

Conclusions Addition of levosimendan to conventional therapy did not improve outcome in patients with PPCM. In patients with PLVD or patients who died, LVEF, LVESD and left atrial diameter were worse than those with complete resolution.

European Journal of Heart Failure (2016) **18**, 1096–1105
doi:10.1002/ejhf.586

HFA PRACTICAL GUIDANCE





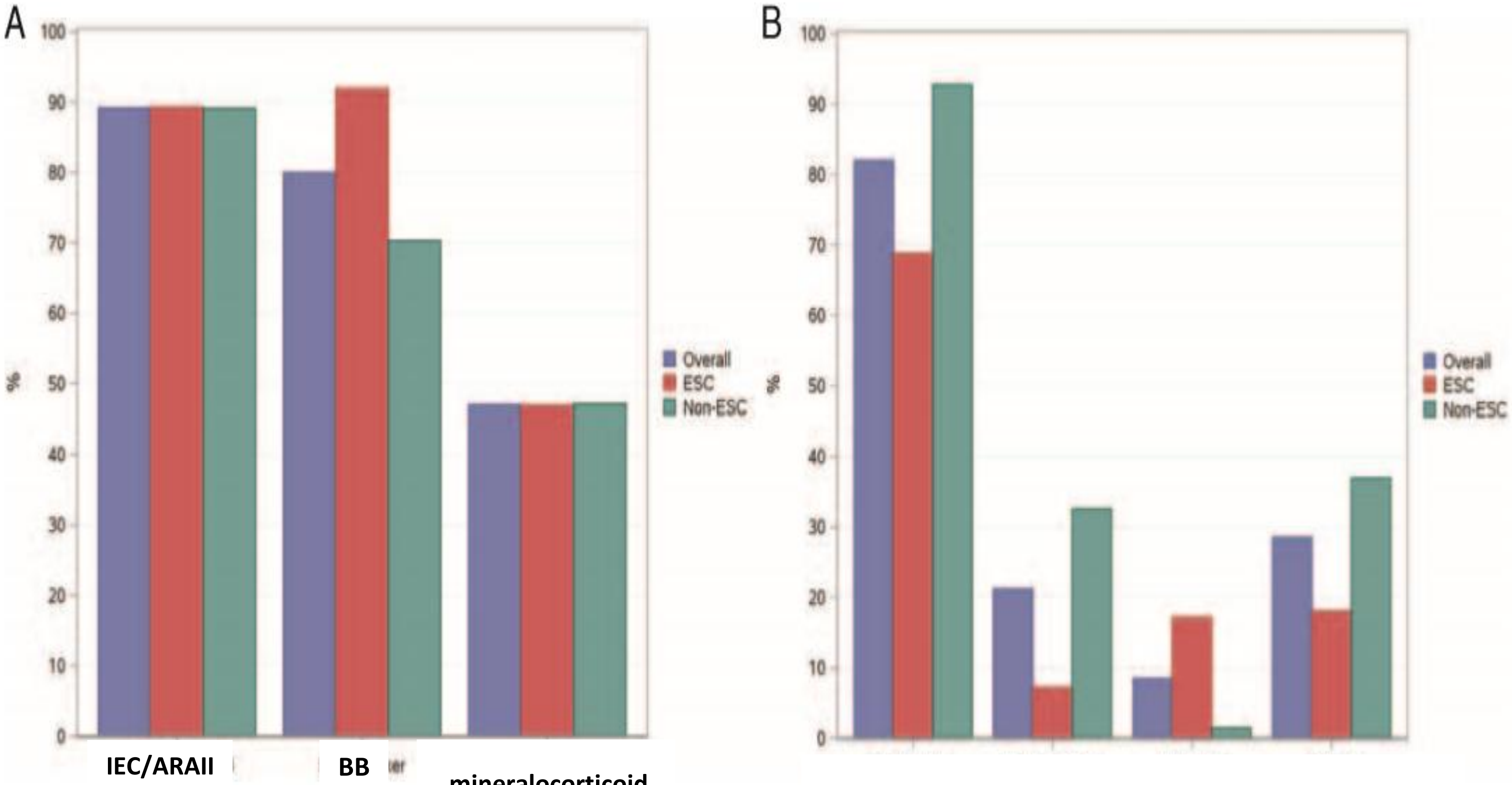
PPCM Participant enrolment in ESC & NON-ESC Countries as of 26 July 2016.
148 registered centres in 61 countries of which, 43 are active countries.

ENROLLMENT ≥ 1
ESC countries
NON-ESC Countries
1 – 5 participants
6 – 15 participants
> 15 participants

European Journal of Heart Failure (2017)
doi:10.1002/ejhf.780

Clinical characteristics of patients from the worldwide registry on peripartum cardiomyopathy (PPCM)

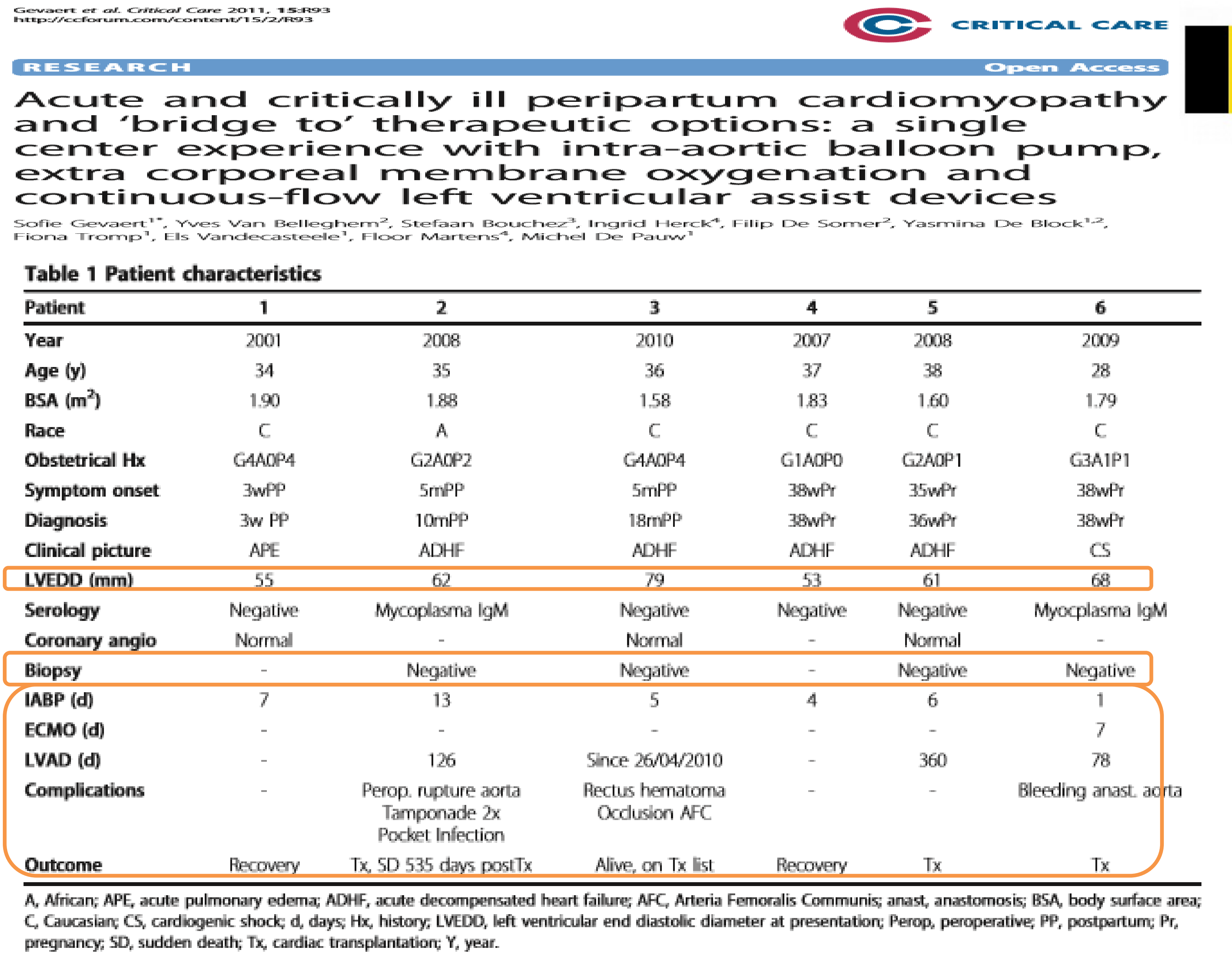
EURObservational Research Programme in conjunction with the Heart Failure Association of the European Society of Cardiology Study Group on PPCM



IEC/ARAII BB mineralocorticoid Receptor antagonists

Diurétiques Brompcriptine Ivabradine digoxine

« Thérapeutiques d’exception »



Gevaert *et al. Critical Care* 2011, 15:R93
http://ccforum.com/content/15/2/R93

CRITICAL CARE

RESEARCH Open Access

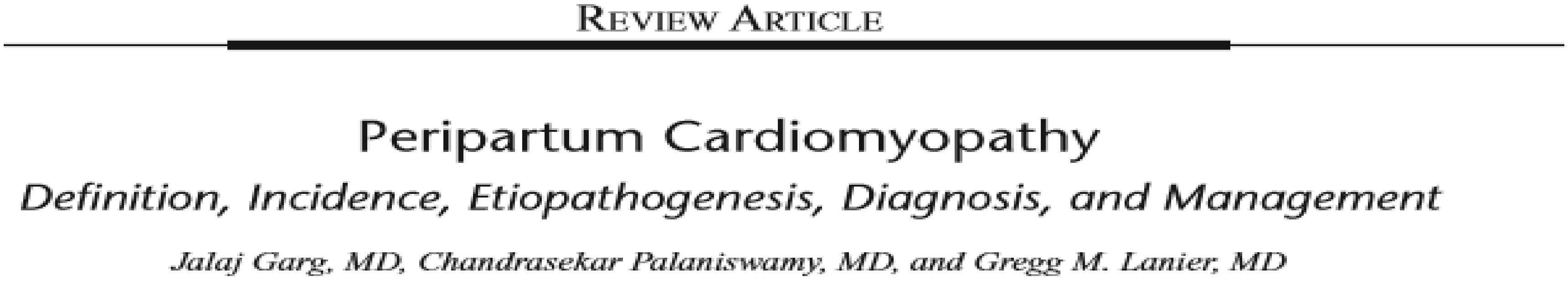
Acute and critically ill peripartum cardiomyopathy and 'bridge to' therapeutic options: a single center experience with intra-aortic balloon pump, extra corporeal membrane oxygenation and continuous-flow left ventricular assist devices

Sofie Gevaert[1*], Yves Van Belleghem[2], Stefaan Bouchez[3], Ingrid Herck[4], Filip De Somer[2], Yasmina De Block[1,2], Fiona Tromp[1], Els Vandecasteele[1], Floor Martens[4], Michel De Pauw[1]

Table 1 Patient characteristics

Patient	1	2	3	4	5	6
Year	2001	2008	2010	2007	2008	2009
Age (y)	34	35	36	37	38	28
BSA (m^2)	1.90	1.88	1.58	1.83	1.60	1.79
Race	C	A	C	C	C	C
Obstetrical Hx	G4A0P4	G2A0P2	G4A0P4	G1A0P0	G2A0P1	G3A1P1
Symptom onset	3wPP	5mPP	5mPP	38wPr	35wPr	38wPr
Diagnosis	3w PP	10mPP	18mPP	38wPr	36wPr	38wPr
Clinical picture	APE	ADHF	ADHF	ADHF	ADHF	CS
LVEDD (mm)	55	62	79	53	61	68
Serology	Negative	Mycoplasma IgM	Negative	Negative	Negative	Myocplasma IgM
Coronary angio	Normal	-	Normal	-	Normal	-
Biopsy	-	Negative	Negative	-	Negative	Negative
IABP (d)	7	13	5	4	6	1
ECMO (d)	-	-	-	-	-	7
LVAD (d)	-	126	Since 26/04/2010	-	360	78
Complications	-	Perop. rupture aorta Tamponade 2x Pocket Infection	Rectus hematoma Occlusion AFC	-	-	Bleeding anast. aorta
Outcome	Recovery	Tx, SD 535 days postTx	Alive, on Tx list	Recovery	Tx	Tx

A, African; APE, acute pulmonary edema; ADHF, acute decompensated heart failure; AFC, Arteria Femoralis Communis; anast, anastomosis; BSA, body surface area; C, Caucasian; CS, cardiogenic shock; d, days; Hx, history; LVEDD, left ventricular end diastolic diameter at presentation; Perop, peroperative; PP, postpartum; Pr, pregnancy; SD, sudden death; Tx, cardiac transplantation; Y, year.



REVIEW ARTICLE

Peripartum Cardiomyopathy

Definition, Incidence, Etiopathogenesis, Diagnosis, and Management

Jalaj Garg, MD, Chandrasekar Palaniswamy, MD, and Gregg M. Lanier, MD

- Pentoxifylline (antiTNF-alpha) (30 patientes,*Sliwa K; Eur J Heart Fail. 2002)*
- Immunoglobulines *(6 patientes-Bozkurt B; J Am Coll Cardiol. 1999)*
- Défibrillateur AI (EF < 30% malgré traitement ou arythmie ventriculaire ou QRS > 120)
- Anticoagulation (FEVG<25%)
- Mechanical Assist Device –ECMO -BCPIA
- Heart Transplantation

Cardiology in Review • Volume 23, Number 2, March/April 2015

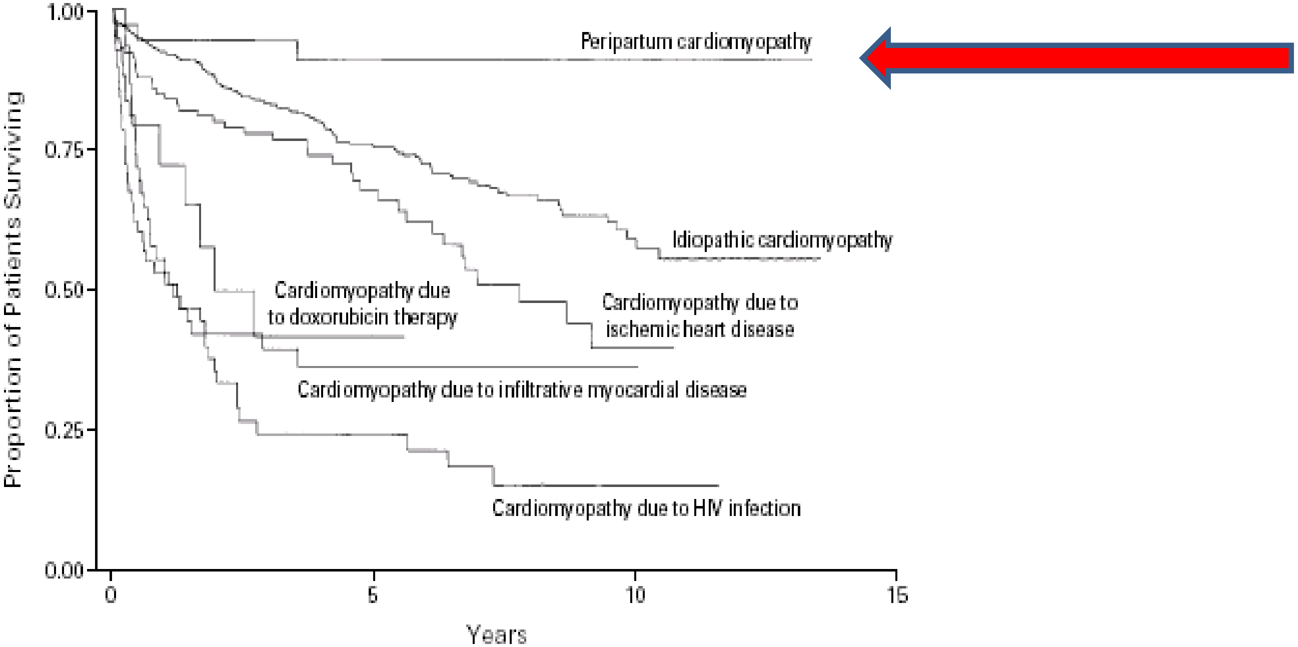
Pronostic

Mortalité

- Mortalité ≈**10**-16% à 6 mois

Sliwa et al. Eur J Heart Fail 2010;12:767-78

- Meilleur pronostic que les autres cardiomyopathies



Felker et al. N Engl J Med 2000;342:1077-84

Journal of the American College of Cardiology
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Published by Elsevier Inc.

Vol. 58, No. 7, 2011
ISSN 0735-1097/$36.00
doi:10.1016/j.jacc.2011.03.047

STATE-OF-THE-ART PAPER

Clinical Characteristics of Peripartum Cardiomyopathy in the United States

Diagnosis, Prognosis, and Management

Uri Elkayam, MD

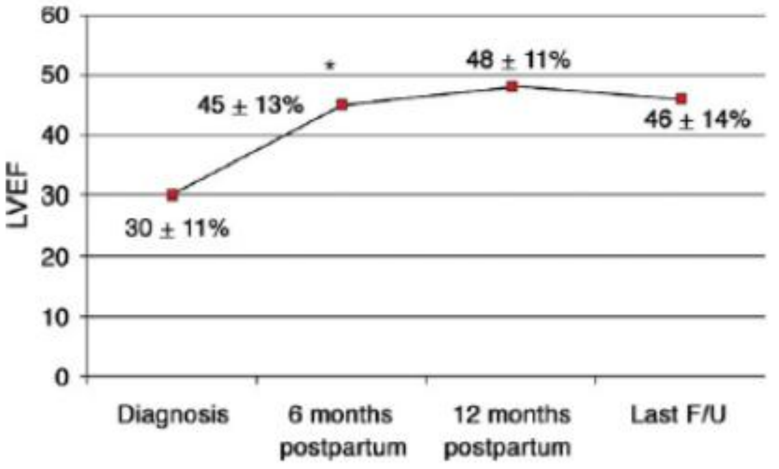


Figure 3 Pattern of Recovery of Left Ventricular Function in 40 Patients With PPCM

There was a significant increase in left ventricular ejection fraction (LVEF) between time of diagnosis and 6 months (*$p < 0.0001$), with only a small and statistically insignificant further increase after 6 months. F/U = follow-up. Adapted from Elkayam et al. (8).

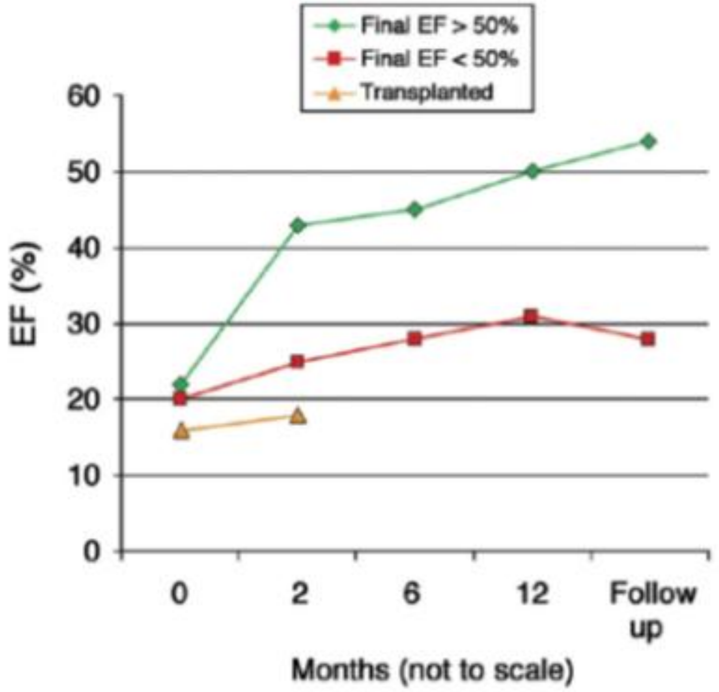
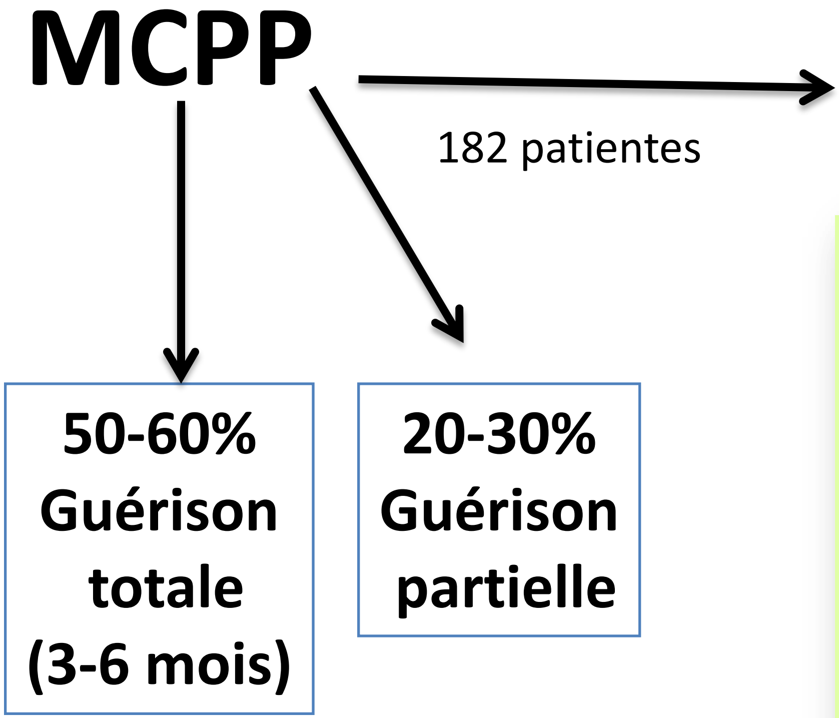


Figure 4 Trend in LVEF According to Final Outcome

EF = ejection fraction; LV = left ventricular.
Adapted, with permission, from Amos et al. (26).

Clinical Profile and Predictors of Complications in Peripartum Cardiomyopathy

SOREL GOLAND, MD,[1] KALGI MODI, MD,[2] FAHED BITAR, MD,[3] MUNIR JANMOHAMED, MD,[3] JAMES M. MIROCHA, MS,[1]
LAWRENCE SC. CZER, MD,[1] SANDRA ILLUM, MD,[2] PARTA HATAMIZADEH, MD,[3] AND URI ELKAYAM, MD[3]



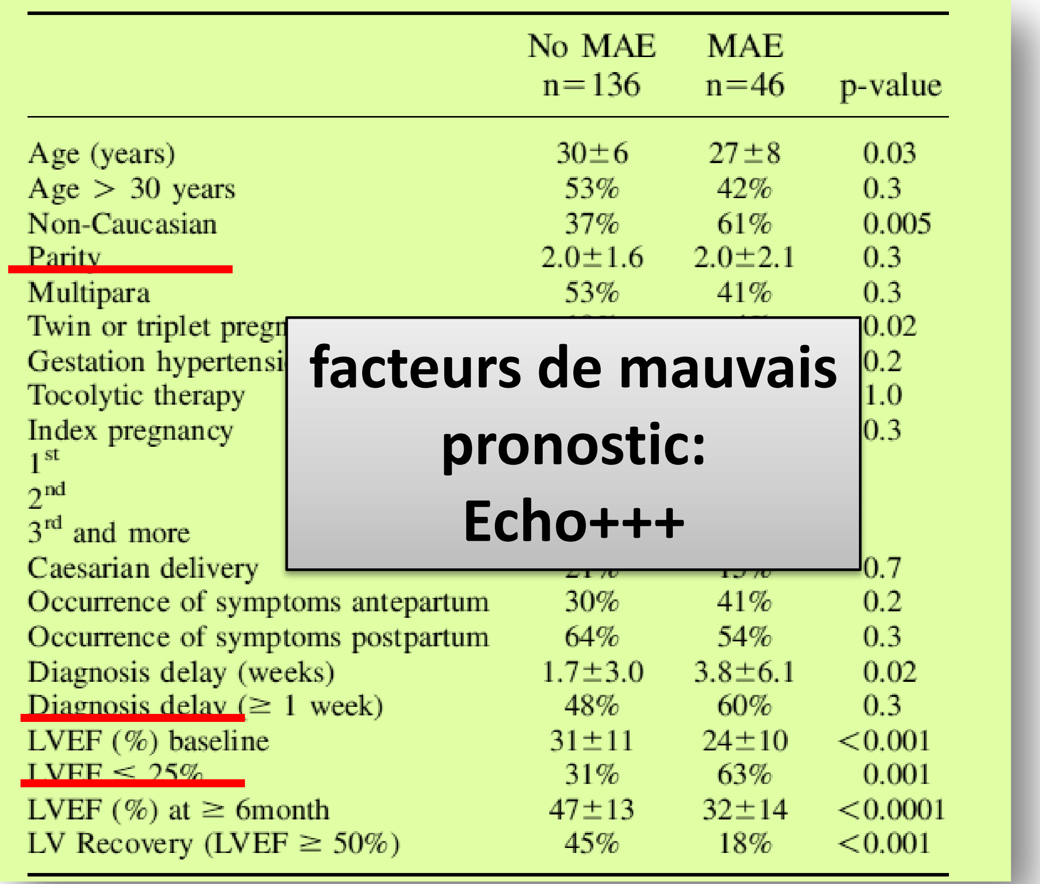
MCPP

182 patientes

50-60%
Guérison
totale
(3-6 mois)

20-30%
Guérison
partielle

Evènements indésirables majeurs :
Choc irréversible, greffe, décès, ACR, assistance, ECMO, Tr du rythme (pacemaker, defib),
Insuff cardiaque chronique



	No MAE n=136	MAE n=46	p-value
Age (years)	30±6	27±8	0.03
Age > 30 years	53%	42%	0.3
Non-Caucasian	37%	61%	0.005
Parity	2.0±1.6	2.0±2.1	0.3
Multipara	53%	41%	0.3
Twin or triplet pregn			0.02
Gestation hypertensi			0.2
Tocolytic therapy			1.0
Index pregnancy			0.3
1st			
2nd			
3rd and more			
Caesarian delivery			0.7
Occurrence of symptoms antepartum	30%	41%	0.2
Occurrence of symptoms postpartum	64%	54%	0.3
Diagnosis delay (weeks)	1.7±3.0	3.8±6.1	0.02
Diagnosis delay (≥ 1 week)	48%	60%	0.3
LVEF (%) baseline	31±11	24±10	<0.001
LVEF ≤ 25%	31%	63%	0.001
LVEF (%) at ≥ 6month	47±13	32±14	<0.0001
LV Recovery (LVEF ≥ 50%)	45%	18%	<0.001

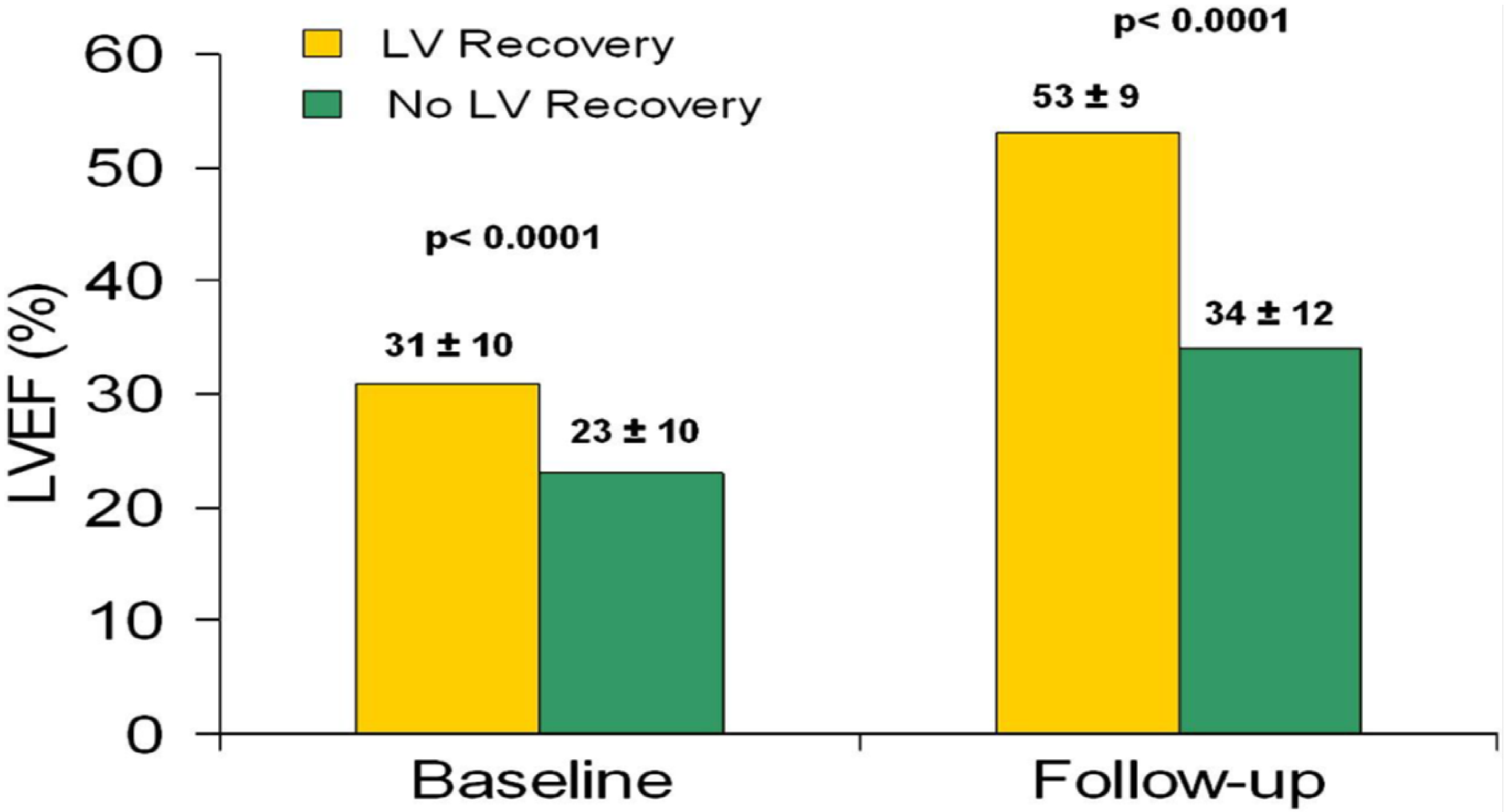
facteurs de mauvais pronostic:
Echo+++

J Card Fail. 2009 Oct;15(8):645-50.

Evaluation of the Clinical Relevance of Baseline Left Ventricular Ejection Fraction as a Predictor of Recovery or Persistence of Severe Dysfunction in Women in the United States With Peripartum Cardiomyopathy

SOREL GOLAND, MD,[1] FAHED BITAR, MD,[1] KALGI MODI, MD,[2] JORDAN SAFIRSTEIN, MD,[3] ANGELA RO, MD,[3]
JAMES MIROCHA, MS,[1] NUDRAT KHATRI, MD,[1] AND URI ELKAYAM, MD[1]

Los Angeles, California; Shreveport, Louisiana; and New York, New York



Journal of cardiac falure vol 17 N°5 2011

CMPP: Facteurs de mauvais pronostic

- Gravité de la défaillance HD **initiale** (FEVG) et sa réponse au ttt
- Complications **emboliques**
- Existence d'une cardiopathie **séquellaire** au delà **du 6 ème** mois après diagnostic

Une nouvelle grossesse

Outcome of Subsequent Pregnancy in Patients With Documented Peripartum Cardiomyopathy

Karen Sliwa, MD, PhD, Olaf Forster, MD, Fitzgerald Zhanje, MD, Geoff Candy, PhD,
John Kachope, MD, and Rafique Essop, MD

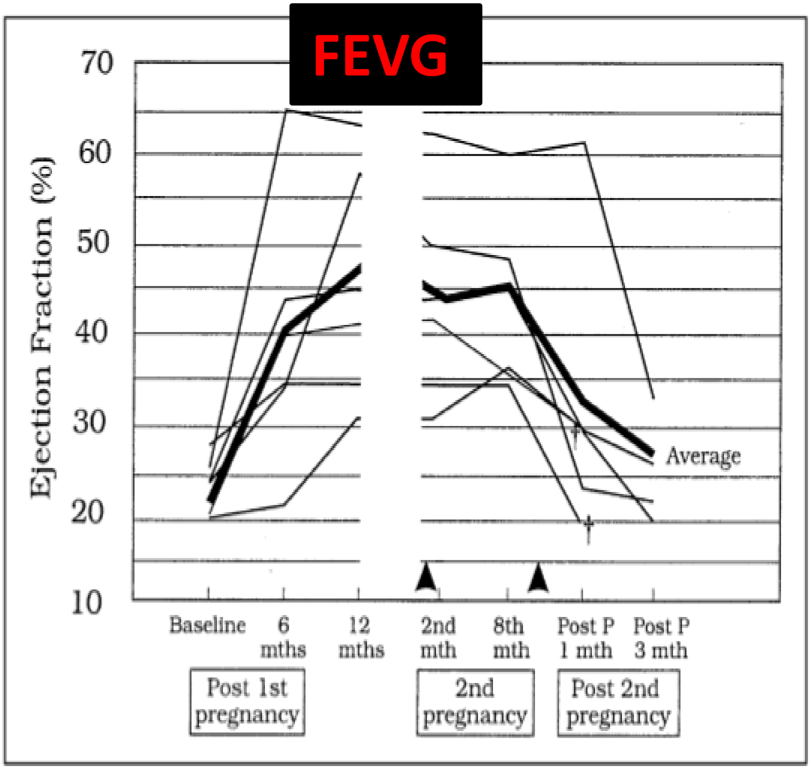


FIGURE 1. Time course pattern of left ventricular function in patients with PC and subsequent pregnancy. †p ≤0.05 comparing 8 months of pregnancy versus 3 months postpartum.

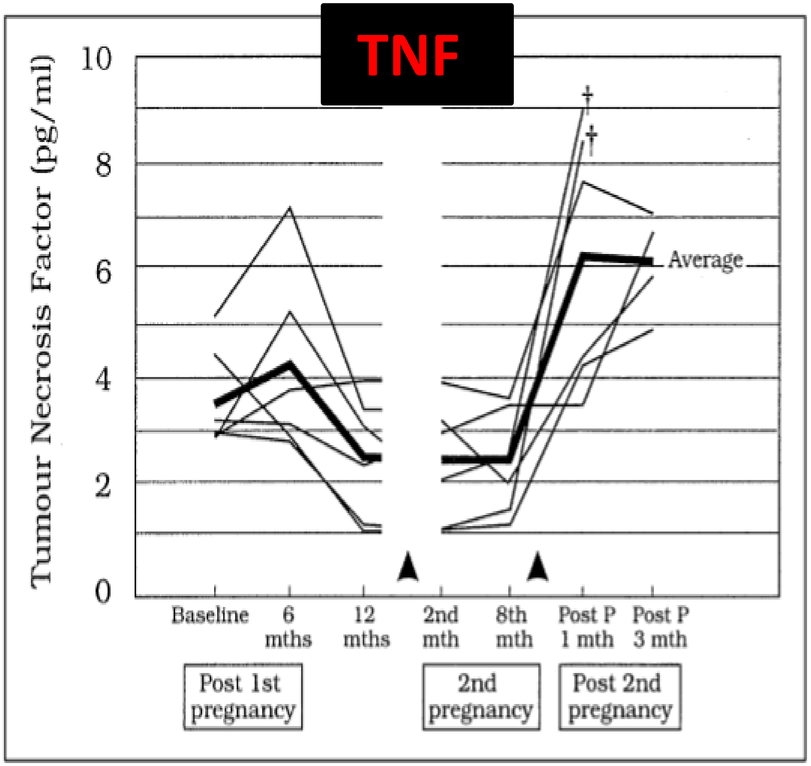


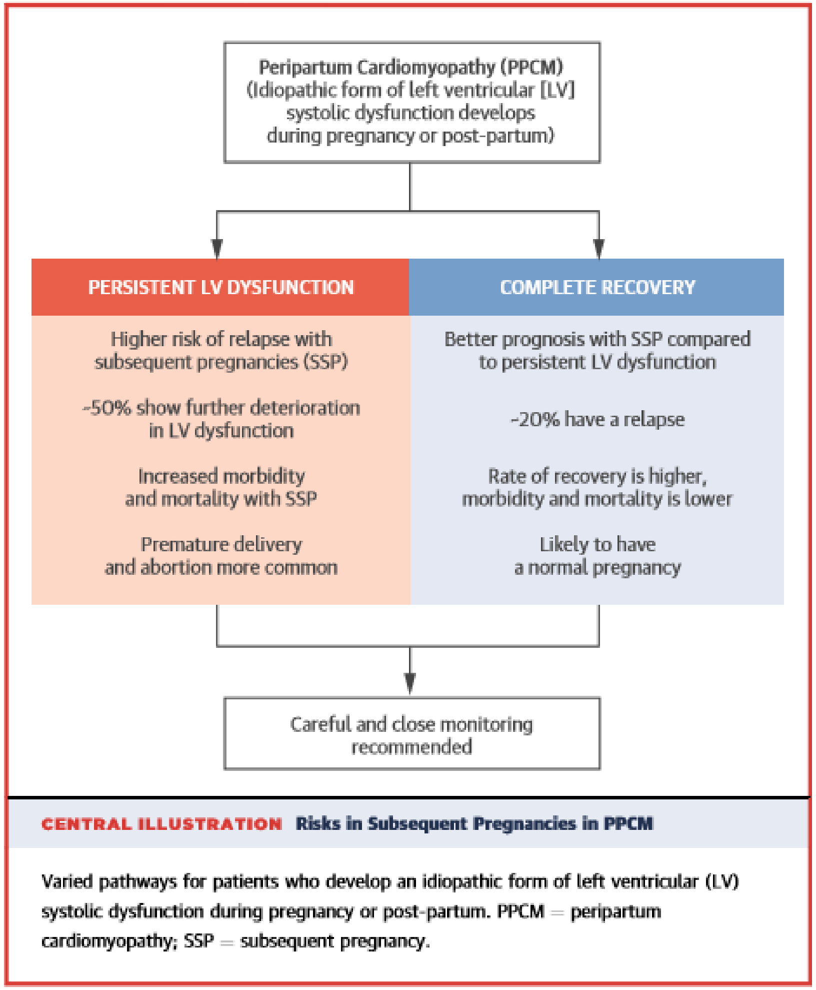
FIGURE 2. Time course pattern of TNF-α in patients with PC and subsequent pregnancy. †p ≤0.05 comparing 8 months of pregnancy versus 3 months postpartum.

The American Journal of Cardiology Vol. 93 June 1, 2004

JACC
JOURNAL OF THE AMERICAN COLLEGE OF CARDIOLOGY

Risk of Subsequent Pregnancy in Women With a History of Peripartum Cardiomyopathy

Uri Elkayam, MD



Peripartum Cardiomyopathy (PPCM)
(Idiopathic form of left ventricular [LV] systolic dysfunction develops during pregnancy or post-partum)

PERSISTENT LV DYSFUNCTION	COMPLETE RECOVERY
Higher risk of relapse with subsequent pregnancies (SSP)	Better prognosis with SSP compared to persistent LV dysfunction
~50% show further deterioration in LV dysfunction	~20% have a relapse
Increased morbidity and mortality with SSP	Rate of recovery is higher, morbidity and mortality is lower
Premature delivery and abortion more common	Likely to have a normal pregnancy

Careful and close monitoring recommended

CENTRAL ILLUSTRATION **Risks in Subsequent Pregnancies in PPCM**

Varied pathways for patients who develop an idiopathic form of left ventricular (LV) systolic dysfunction during pregnancy or post-partum. PPCM = peripartum cardiomyopathy; SSP = subsequent pregnancy.

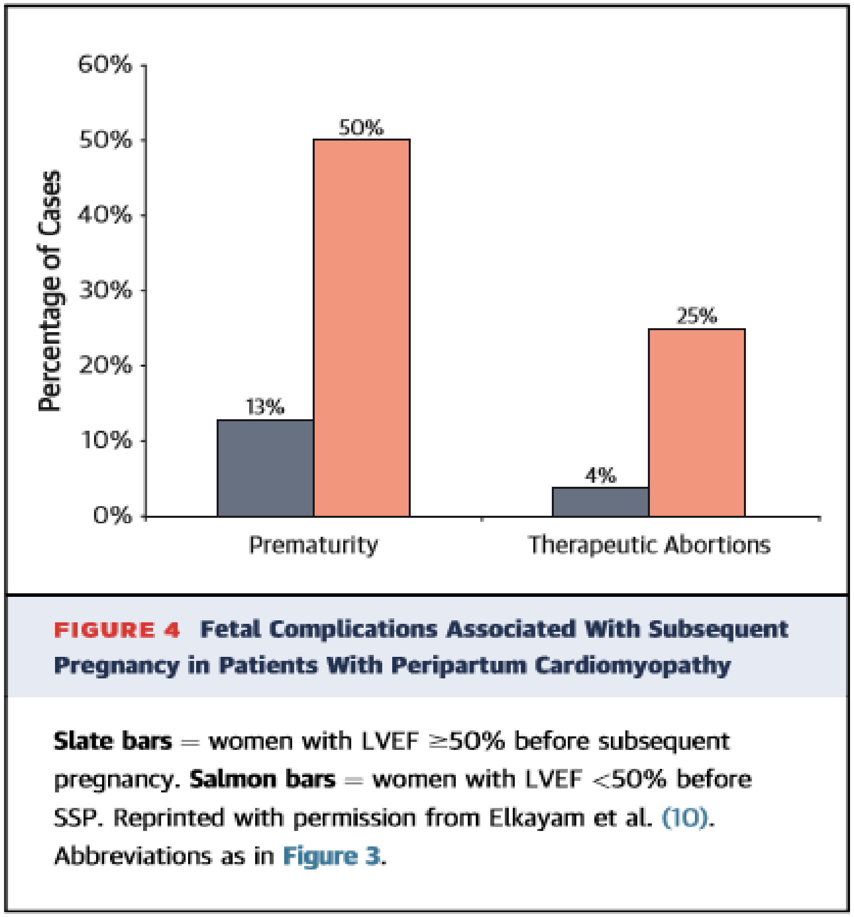


FIGURE 4 **Fetal Complications Associated With Subsequent Pregnancy in Patients With Peripartum Cardiomyopathy**

Slate bars = women with LVEF ≥50% before subsequent pregnancy. **Salmon bars** = women with LVEF <50% before SSP. Reprinted with permission from Elkayam et al. (10). Abbreviations as in Figure 3.

VOL. 64, NO. 15, 2014

Recommandations avant nouvelle grossesse

- CID si FE < 50%
- Déconseillée même si FE normale (20% récidive)
- Arrêt des IEC 3 mois avant la grossesse (test !)
- Echographie de référence sans IEC *(car sont CID si grossesse)*
- Epreuve d'effort conseillée
- Surveillance par BNP + écho
- Information (ITG)
- Traitement bromocryptine après naissance ?

Take home messages

Don't forget :

Ce qu’on sait

- Incidence variable
- Caractéristiques semblables
- HTA- Femme africaine
- Les complications les plus graves peuvent être diminuées ou évitées
- La récupération complète se produit plus fréquemment qu'avec toute autre cardiomyopathie
- Auto-immunité-inflammation
- Des guidelines efficaces fondées sur des preuves disponibles
- Nouvelle grossesse : à risque

Des questions

- Les «déclencheurs» réels qui initient le processus
- Rôle du virus dans la pathogenèse
- Incidence plus élevée/ plus sévère chez les africaines : prédisposition génétique
- Prolactine / inhibition de la prolactine
- Pourquoi certaines patientes ayant récupérés ont-ils une rechute d'insuffisance cardiaque lors des grossesses ultérieures?
- Rôle des micronutriments et des métaux traces dans la pathogenèse
- Biomarqueurs