CLERMONT-FERRAND
CENTRE HOSPITALIER UNIVERSITAIRE
Pascal Motreff, MD, PhD
UNIVERSITÉ Clermont Auvergne

CARDIO RUN 2023
15ème CONGRÈS DE PATHOLOGIE CARDIO-VASCULAIRE

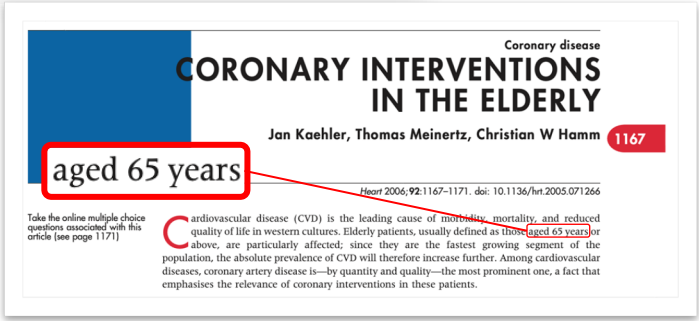
Spécificité de la coronaropathie du sujet âgé

Coronaropathie du sujet âgé

Définition du sujet âgé :

- 10 ans de plus que son patron ?

Coronaropathie du sujet âgé



Coronary disease

CORONARY INTERVENTIONS IN THE ELDERLY

Jan Kaehler, Thomas Meinertz, Christian W Hamm 1167

aged 65 years

Heart 2006; 92:1167–1171. doi: 10.1136/hrt.2005.071266

Take the online multiple choice questions associated with this article (see page 1171)

Cardiovascular disease (CVD) is the leading cause of morbidity, mortality, and reduced quality of life in western cultures. Elderly patients, usually defined as those aged 65 years or above, are particularly affected; since they are the fastest growing segment of the population, the absolute prevalence of CVD will therefore increase further. Among cardiovascular diseases, coronary artery disease is—by quantity and quality—the most prominent one, a fact that emphasises the relevance of coronary interventions in these patients.

Définition du sujet âgé :

- 10 ans de plus que son patron ?
- Plus de 65 ans ?

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Coronaropathie du sujet âgé

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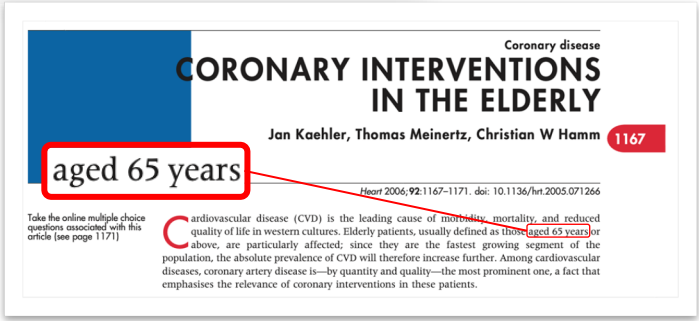
Coronary disease

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Définition du sujet âgé :

- 10 ans de plus que son patron ?
- Plus de 65 ans ?
- Plus de 75 ans ? — 22% des SCA ST+ — FRANCE PCI — 33% des PCI
- Plus de 80 ans ? — 14% des SCA ST+ — **20% des PCI**

Pathologie d'avenir…

x 2 octogénaires en 2040 (7 millions)

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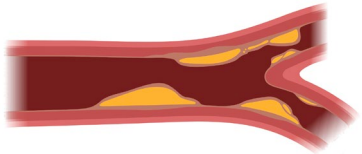
Coronaropathie du sujet âgé

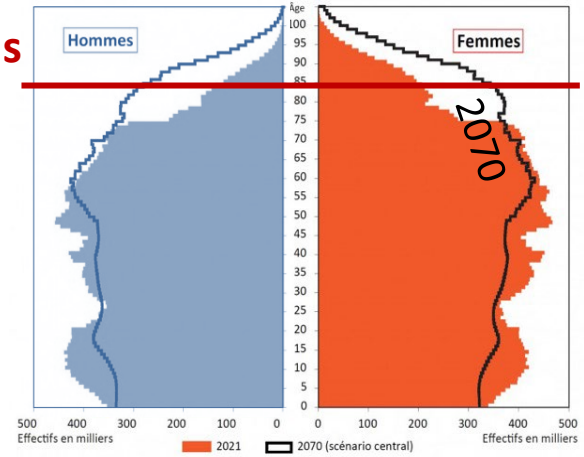
CHU CLERMONT-FERRAND — CENTRE HOSPITALIER UNIVERSITAIRE

Sujet âgé

Coronaropathie dégénérative, FRCV



> 85 ans



Pyramide des âges en France en 2021 et projection pour 2070

Espérance de vie :

79 ans pour Hommes

85 ans pour Femmes

Population de plus de 85 ans :

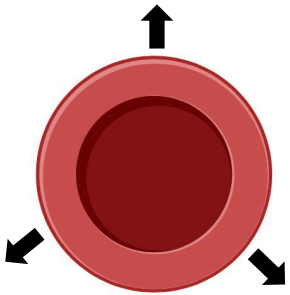
= 1.8 Million

= 5.0 Millions en 2050

Coronaropathie du sujet âgé

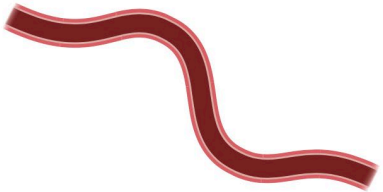
Vieillissement artériel

Augmentation du calibre
des gros vaisseaux



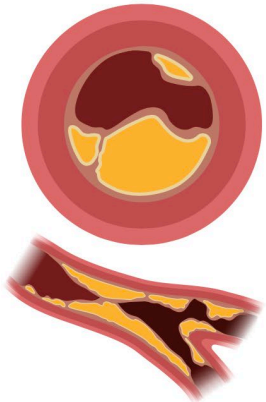
Tortuosités

- Allongement vasculaire
- *Tassement squelettique*



Remaniement de la paroi

Athérosclérose / Artériosclérose



Dysfonction endothéliale

Remodelage matrice extracellulaire

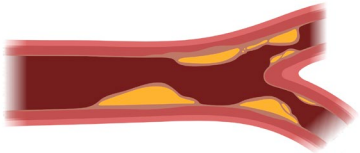
↘ fibres élastiques ↗ collagène

Calcifications pariétales

→ Paroi devient plus rigide

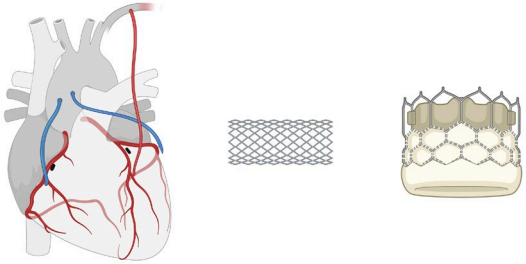
Coronaropathie du sujet âgé

Coronarien



Sujet âgé

Progrès de la médecine, de la cardiologie



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Coronaropathie du sujet âgé

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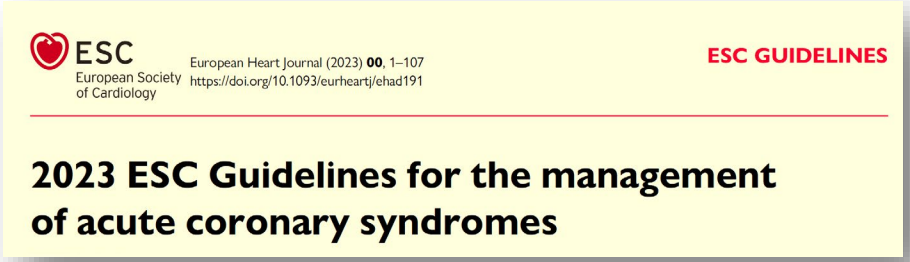
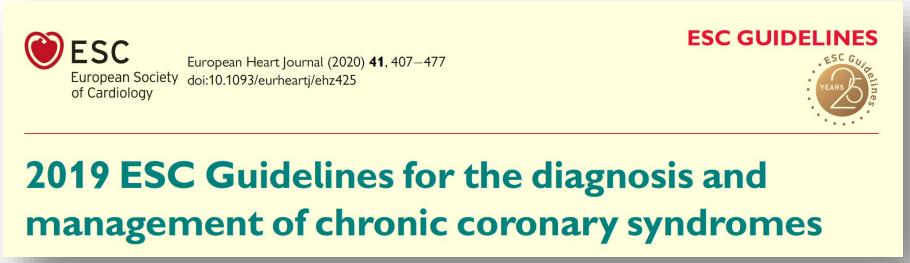
- **Syndrome coronarien chronique (2019)**



- **Syndrome coronarien aigu (2023)**



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Coronaropathie du sujet âgé

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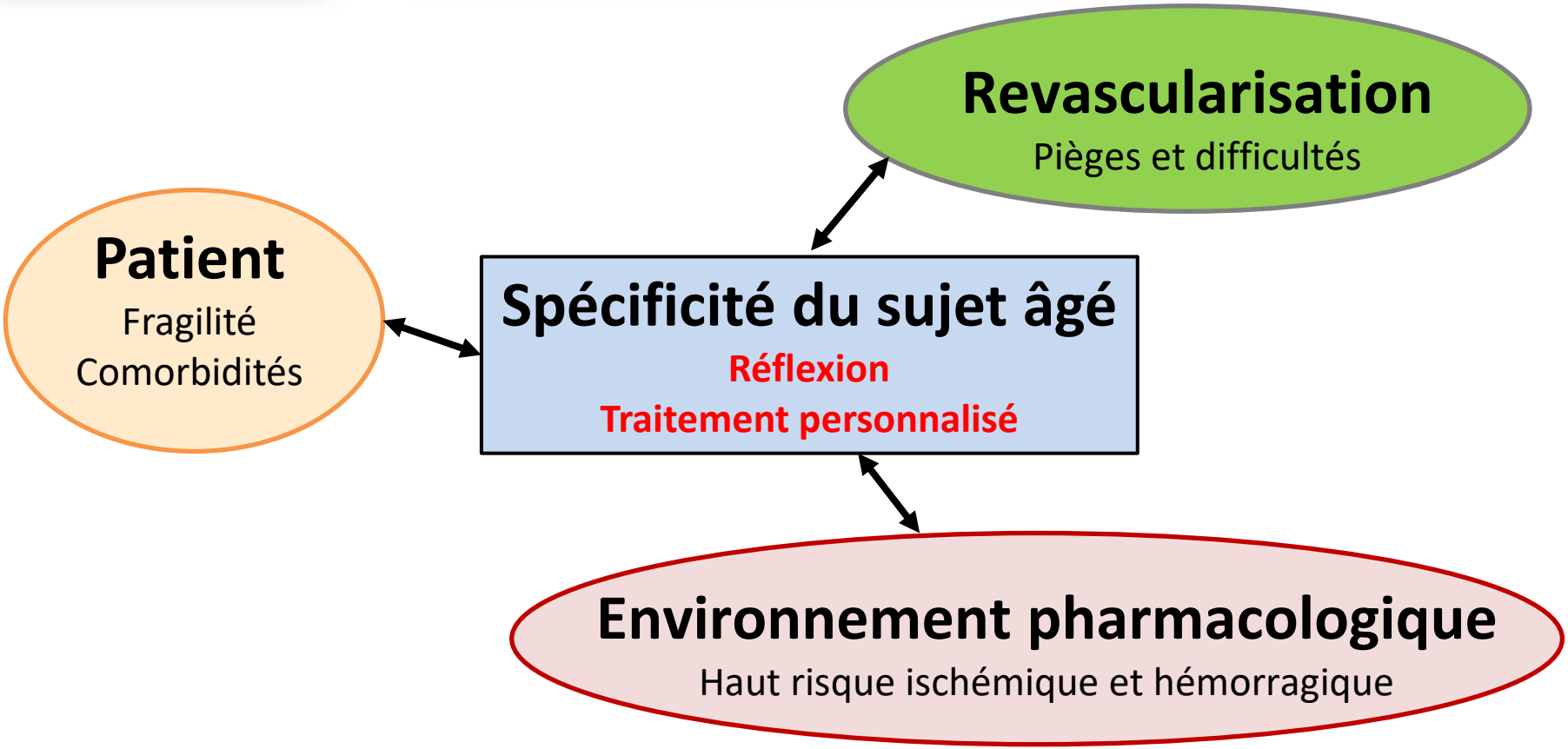

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Coronaropathie du sujet âgé

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Patient fragile
Fonctions cognitives
Activités, gêne fonctionnelle
Sarcopénie
Comorbidités
Espérance de vie

Décision difficile, à partager

Heart Team, avis gériatrique

Procédures complexes et à haut risque
Lésions critiques : TC, pluritronculaires
Lésions résistantes (calcifications)
Difficultés techniques (abords, tortuosités, CTO)
Comorbidités cardiaques (TAVI, dysfonction VG)
Comorbidités extracardiaques (I.Rénale, I.Respi)
Alternatives ou Rescue déraisonnables (pontages, assistance)

Environnement pharmacologique
Haut risque ischémique et hémorragique

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Coronaropathie du sujet âgé

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Prévention

Eur J Preventive Cardiol 2022

ESC European Society of Cardiology
European Journal of Preventive Cardiology (2022) **29**, 1412–1424
https://doi.org/10.1093/eurjpc/zwac033
REVIEW

Cardiovascular disease in the elderly: proceedings of the European Society of Cardiology—Cardiovascular Round Table

Primary prevention in **older people**:
It's never too late to initiate risk factor management strategies


Quit smoking


Manage dyslipidemia with shared decision-making


Treat hypertension. Individualize target BP


Aspirin may have a poor benefit:risk ratio


Eat a healthy diet


Tailored, increase in physical activity level


Individualized risk/benefit analysis: Consider comorbidities, frailty, competing (non-CV) risks, life expectancy, and patient preferences


Multidisciplinary-team approach

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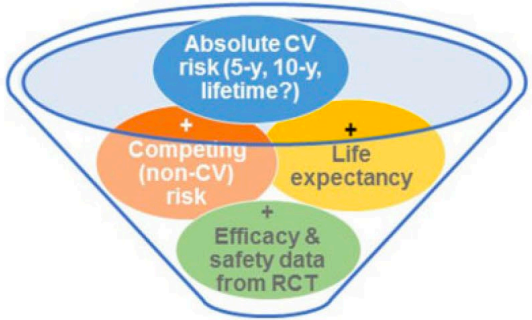
Coronaropathie du sujet âgé

CLERMONT-FERRAND CENTRE HOSPITALIER UNIVERSITAIRE

Prévention



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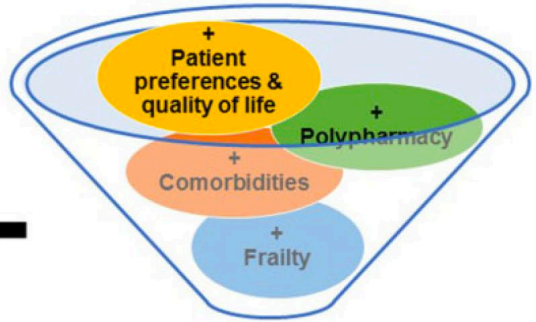
Lifetime benefit of preventive risk factor treatment

+



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Treatment decision

Eur J Preventive Cardiol 2022

ESC European Society of Cardiology
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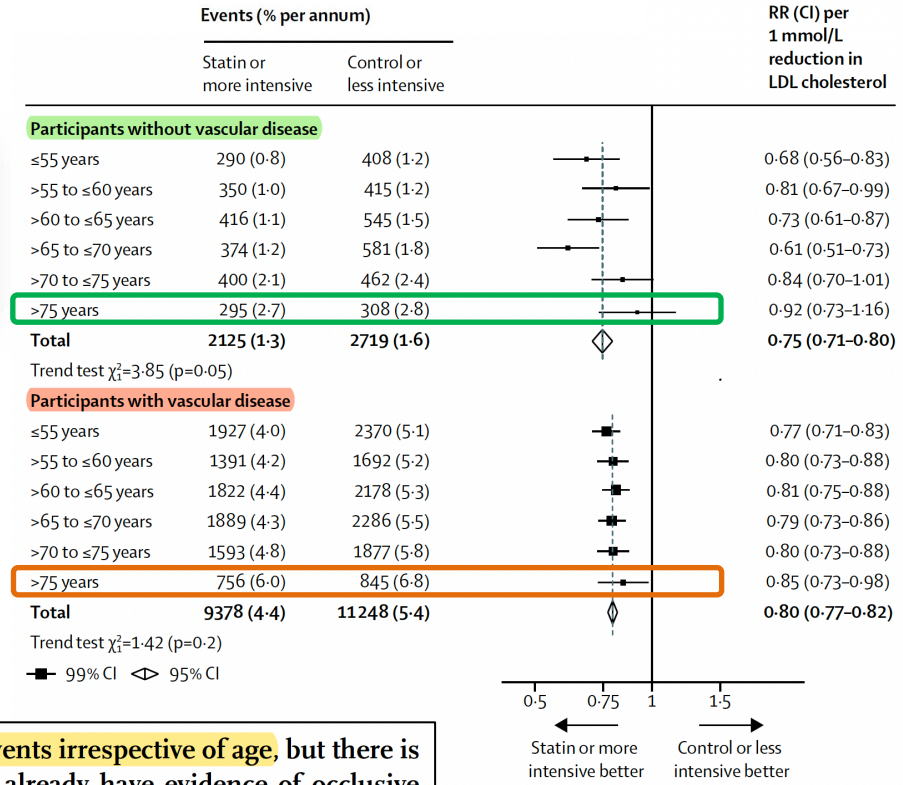
Coronaropathie du sujet âgé

Prévention

Efficacy and safety of statin therapy in older people: a meta-analysis of individual participant data from 28 randomised controlled trials

Lancet 2019



Interpretation Statin therapy produces significant reductions in major vascular events irrespective of age, but there is less direct evidence of benefit among patients older than 75 years who do not already have evidence of occlusive vascular disease. This limitation is now being addressed by further trials.

Coronaropathie du sujet âgé

Syndrome coronarien chronique : SCC

Après 75 ans :

Prévalence coronaropathie élevée

Morbi-mortalité plus élevée (âge, comorbidités)

Sous-représentée dans les études

Sous-traitée, sous-diagnostiquée

Symptômes atypiques, masqués par comorbidités

Test de dépistages limités (imagerie de stress, coroscanner)

➡ **retard diagnostic**

Knuuti J, Eur Heart J 2020

Coronaropathie du sujet âgé

SCC

Après 75 ans :

Options thérapeutiques :

attention aux risques hémorragiques, IR, complications neuro, site ponction

DES recommandé
DAPT plus courte

Recommendations for elderly patients with chronic coronary syndromes

Recommendations	Class[a]	Level[b]
It is recommended that particular attention is paid to side effects of drugs, intolerance, and overdosing in elderly patients.	I	C
The use of DES is recommended in elderly patients.[508,509]	I	A
Radial access is recommended in elderly patients to reduce access-site bleeding complications.[506,507]	I	B
It is recommended that diagnostic and revascularization decisions are based on symptoms, the extent of ischaemia, frailty, life expectancy, and comorbidities.	I	C

Knuuti J, Eur Heart J 2020

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Coronaropathie du sujet âgé

CLERMONT-FERRAND CENTRE HOSPITALIER UNIVERSITAIRE

Décision

ESC European Society of Cardiology
European Journal of Preventive Cardiology (2022) **29**, 1412–1424
https://doi.org/10.1093/eurjpc/zwac033
REVIEW

Cardiovascular disease in the elderly: proceedings of the European Society of Cardiology—Cardiovascular Round Table

Lettino M, Eur J Preventive Cardiol 2022

When, who, and how to perform revascularization

Myocardial revascularization should be performed to improve prognosis or symptoms as recommended in the 2018 ESC/EACTS Guidelines on myocardial revascularization (*Table 2*).[89] Shared decision-making should include consultation with a heart team,

Table 2 Summary of extent of disease indicating a need for revascularization in patients with stable CAD and documented ischaemia or a haemodynamically relevant lesion from the 2018 European guidelines on myocardial revascularization

Goal of improving prognosis

- >50% stenosis in
  - Left main CAD
  - Proximal left anterior descending CAD
  - 2- or 3-vessel disease with LVEF ≤35%
  - Sole remaining patent coronary artery
- Extensive ischaemia on functional testing (>10% LV) or abnormal invasive fractional flow reserve

Goal of improving symptoms

- Haemodynamically significant stenosis in patients with limiting angina on optimized medical therapy

Coronaropathie du sujet âgé

Prise en compte du sur-risque

EXPERT PANEL

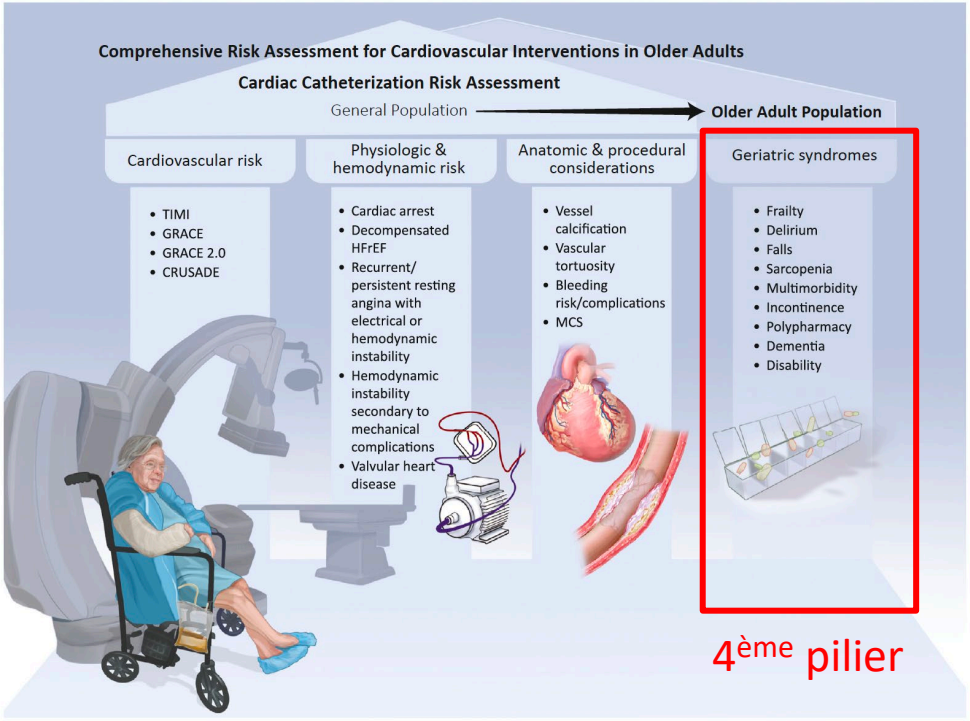
GERIATRIC CARDIOLOGY

Assessment and Management of Older Adults Undergoing PCI, Part 1

A *JACC: Advances* Expert Panel

Nanna MG, JACC Adv 2023

CENTRAL ILLUSTRATION Definitions of a Variety of Geriatric Syndromes Likely Influencing the Individual Risk of Older Adults Undergoing Percutaneous Coronary Intervention



4ème pilier

Nanna MG, et al. JACC Adv. 2023;2(4):100389.

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Coronaropathie du sujet âgé

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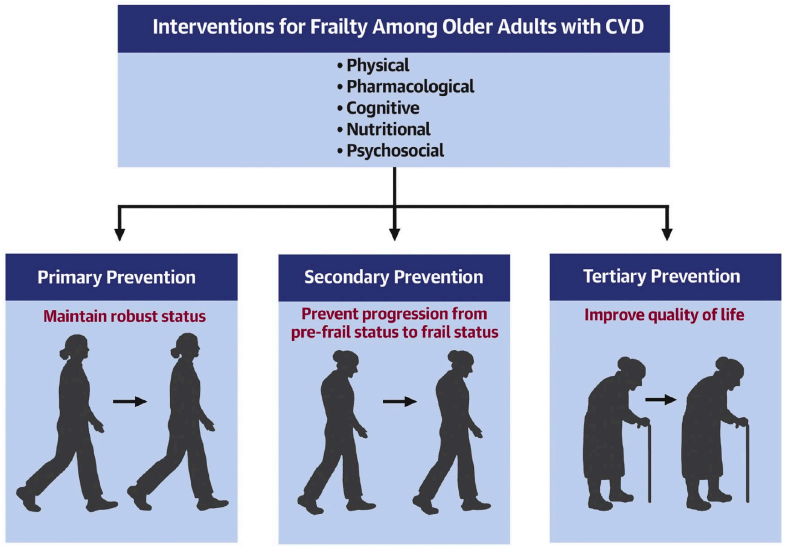
THE PRESENT AND FUTURE

JACC STATE-OF-THE-ART REVIEW

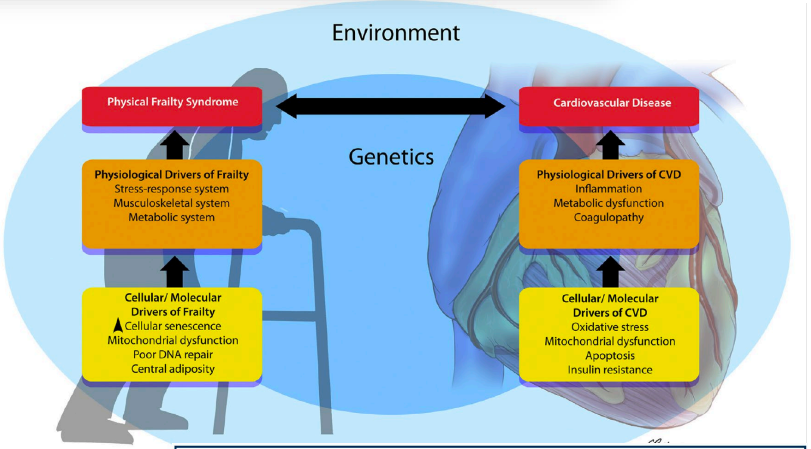
Interventions for Frailty Among Older Adults With Cardiovascular Disease

JACC State-of-the-Art Review

CENTRAL ILLUSTRATION Interventions Aimed at Preventing or Reversing Frailty in Patients With Cardiovascular Disease



Ijaz, N. et al. J Am Coll Cardiol. 2022;79(5):482-503.



HIGHLIGHTS

- Physical frailty syndrome is associated with poor outcomes after cardiovascular events.
- The etiology of frailty in older adults is multifactorial and patient specific.
- Multimodal interventions, including cardiac rehabilitation, can reduce frailty.

Ijaz N. J Am Coll Cardiol 2022

Coronaropathie du sujet âgé

SCC

Lésions proximales, complexes, calcifiées

Progrès ces 15 dernières années +++ : TC, bifurcations ,CTO

Rotablator, Shockwave, Orbital

Accompagnement TAVI

Coronaropathie du sujet âgé

SCC

Lésions proximales, complexes, calcifiées

Progrès ces 15 dernières années +++ : TC, bifurcations ,CTO
Rotablator, Shockwave, Orbital
Accompagnement TAVI

Cas de Mme E. 94 ans
autonome, angor extrêmement serré, pas de comorbidité
très demandeuse

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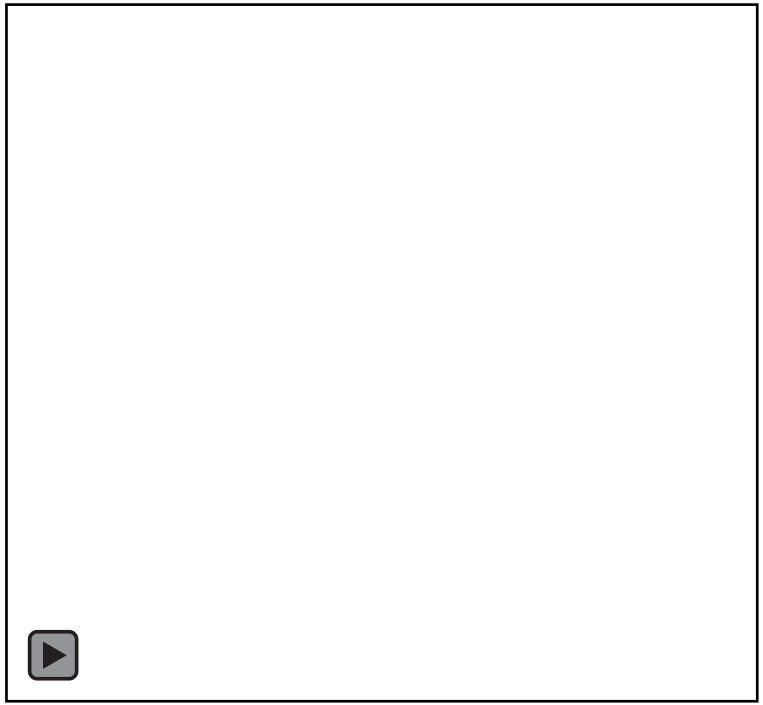
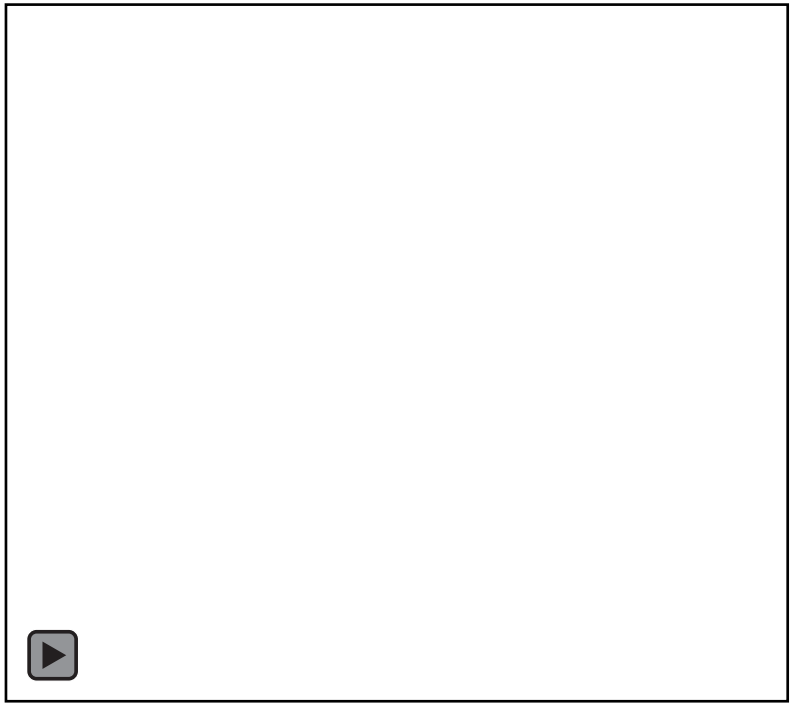
Cas de Mme E., 94 ans

Angor d'effort serré





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Coronaropathie du sujet âgé

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Cas de Mme E., 94 ans

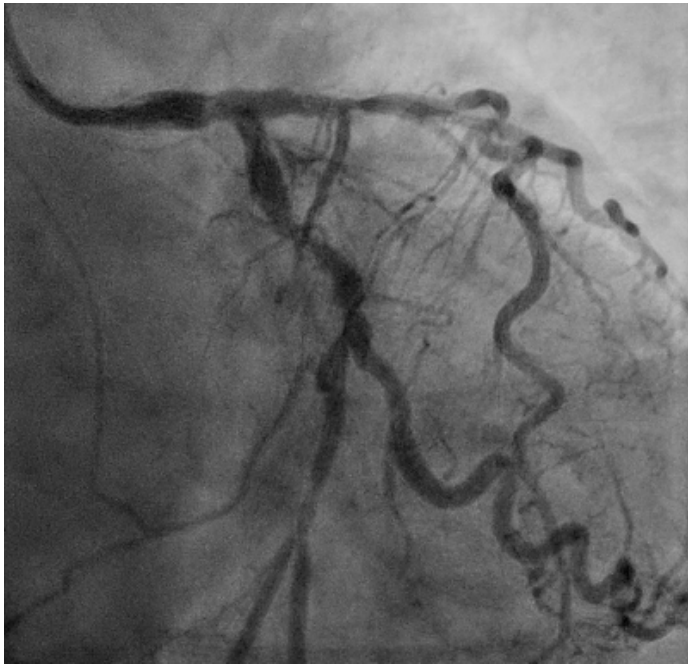
- 7 guides
- 1 microcatheter
- 1 extension catheter
- 1 fraise **Rotablator**
- 4 Stents (DES)

Coronaropathie du sujet âgé

Cas de Mme M., 89 ans

ATCD radiothérapie thoracique

Angor, Coro pré TAVI



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Cas de Mme M., 89 ans

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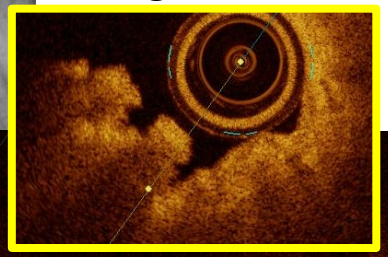
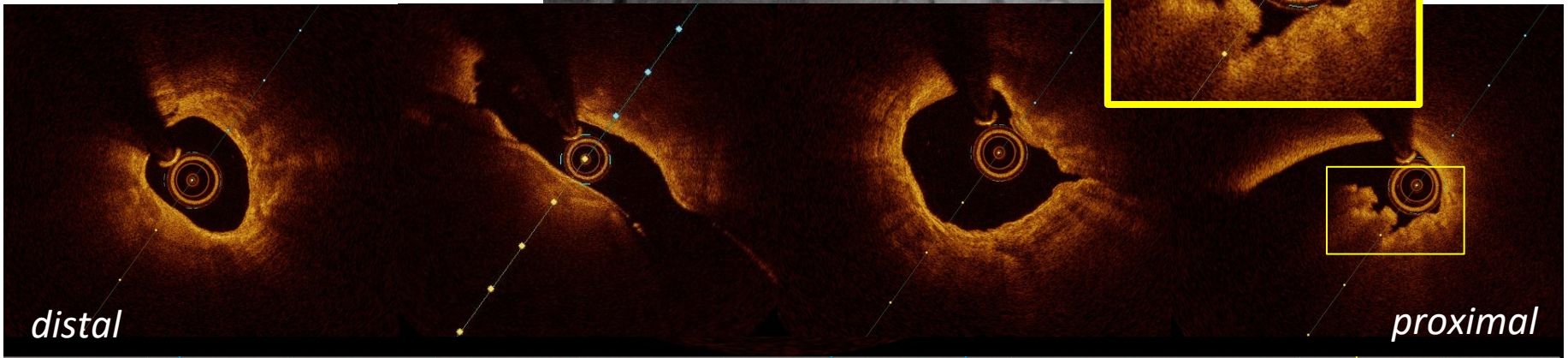
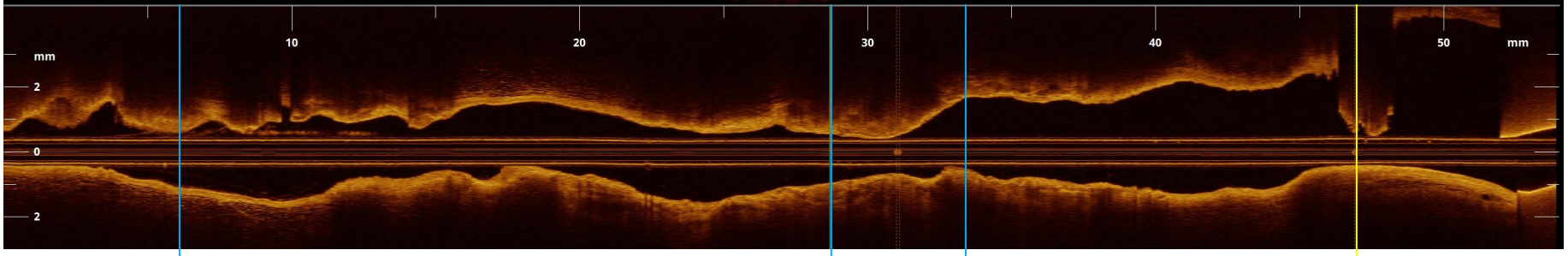
Calcifications superficielles circonférentielles sur long segment IVA proximale

Bourgeon calcifié fin de TC







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Coronaropathie du sujet âgé

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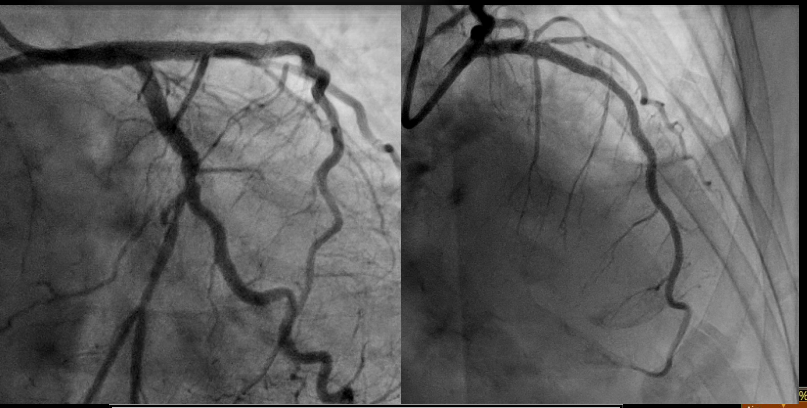
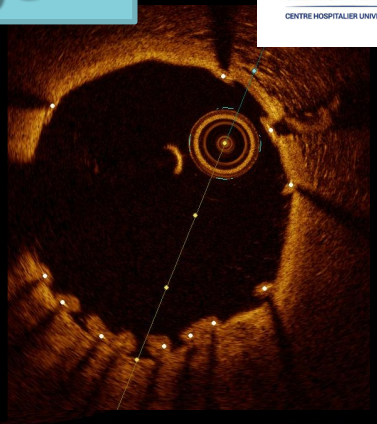
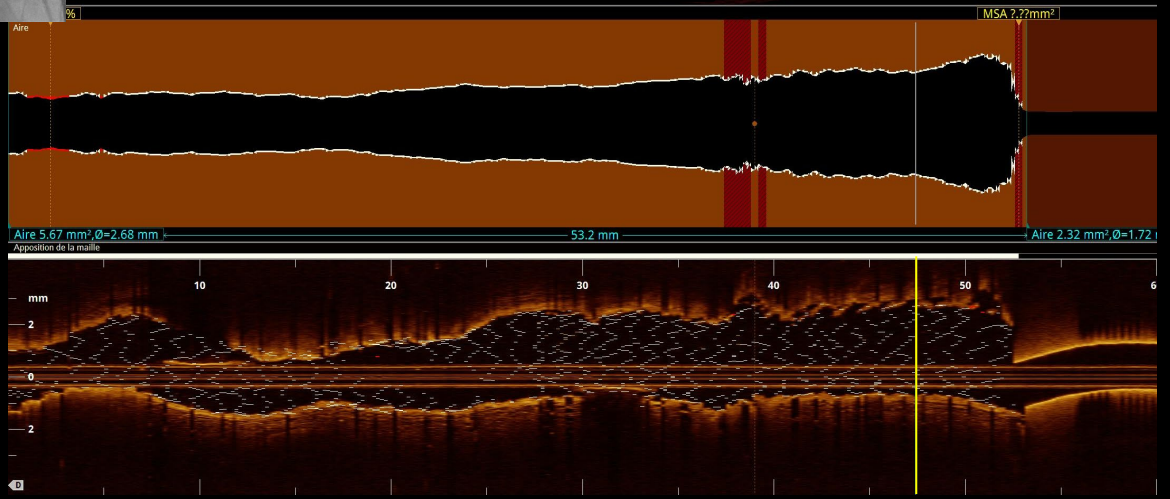


Rotablator,
Prédilatation NCB,
Stenting TC, Stenting IVA,
REPOT





Coronaropathie du sujet âgé

Syndrome coronarien aigu : SCA

ESC European Society of Cardiology
European Heart Journal (2020) **00**, 1–79
doi:10.1093/eurheartj/ehaa575
ESC GUIDELINES

2020 ESC Guidelines for the management of acute coronary syndromes in patients presenting without persistent ST-segment elevation

Eur Heart J 2020

Recommendations	Class[a]	Level[b]
It is recommended to apply the same diagnostic strategies in older patients as for younger patients.[458]	I	B
It is recommended to apply the same interventional strategies in older patients as for younger patients.[463,467]	I	B
The choice of antithrombotic agent and dosage, as well as secondary preventions, should be adapted to renal function, as well as specific contraindications.[461]	I	B

Coronaropathie du sujet âgé

Syndrome coronarien aigu : SCA

ESC European Society of Cardiology
European Heart Journal (2023) **00**, 1–107
https://doi.org/10.1093/eurheartj/ehad191
ESC GUIDELINES

2023 ESC Guidelines for the management of acute coronary syndromes

Byrne RA, Eur Heart J 2023

Plus de 75 ans :

Proportion croissante

Exclus ou **sous-représentés dans les études**

Age = facteur de risque de morbi-mortalité +++

Troponine US très performante même si davantage de « faux positifs »

- **NSTEMI** : peu d'études consacrées > 80 ans : attitude plutôt invasive, mais individualisée (EVAOLD)
- **STEMI** : angioplastie primaire doit être proposée (si raisonnable), voire fibrinolyse

Données France PCI (2014-2022)

24037 STEMI <24h — 18137♂(75%)

Décès H = 1273 **5.3%**
Décès à 1 an = 629 **2.6%**
Décès Total = 1902 **7.9%**
Si Killip III-IV (4.6%) = **42%**

86% → 20746 STEMI < 80 ans — 16454♂ (79%)

Décès H = 862 **4.2%**
Décès à 1 an = 357 **1.7%**
Décès Total = 1219 **5.9%**
Si Killip III-IV = **38%**

14% → 3288 STEMI ≥ 80 ans — 1682♂ (51%)

Décès H = 411 **12.5%**
Décès à 1 an = 272 **8.3%**
Décès Total = 683 **20.8%**
Si Killip III-IV = **56%**

Coronaropathie du sujet âgé

Données France PCI (2014-2022)

24037 STEMI <24h — 18137♂(75%)

Décès H = 1273 **5.3%**
Décès à 1 an = 629 **2.6%**
Décès Total = 1902 **7.9%**
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86%

14%

1/7

20746
STEMI < 80 ans — 16454♂ (79%)

Décès H = 862 **4.2%**
Décès à 1 an = 357 **1.7%**
Décès Total = 1219 **5.9%**
Si Killip III-IV = **38%**

3288
STEMI ≥ 80 ans

Décès H = 411 **12.5%**
Décès à 1 an = 272 **8.3%**
Décès Total = 683 **20.8%**
Si Killip III-IV = **56%**

Parité

1682♂ **(51%)**

x 3 **x 5**

Surmortalité

Coronaropathie du sujet âgé

SCA

RA Byrne, Eur Heart J 2023

Lien entre **<u>syndrome gériatrique</u>** (fragilité + comorbidités) et pronostic

Older adults		
It is recommended to apply the same diagnostic and treatment strategies in older patients as in younger patients.[662,664,665,710,711]	I	B
It is recommended to adapt the choice and dosage of antithrombotic agent, as well as of secondary prevention medications, to renal function, co-medications, comorbidities, frailty, cognitive function, and specific contraindications.[363,712]	I	B
For frail older patients with comorbidities, a holistic approach is recommended to individualize interventional and pharmacological treatments after careful evaluation of the risks and benefits.[668,673,676]	I	B

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Coronaropathie du sujet âgé

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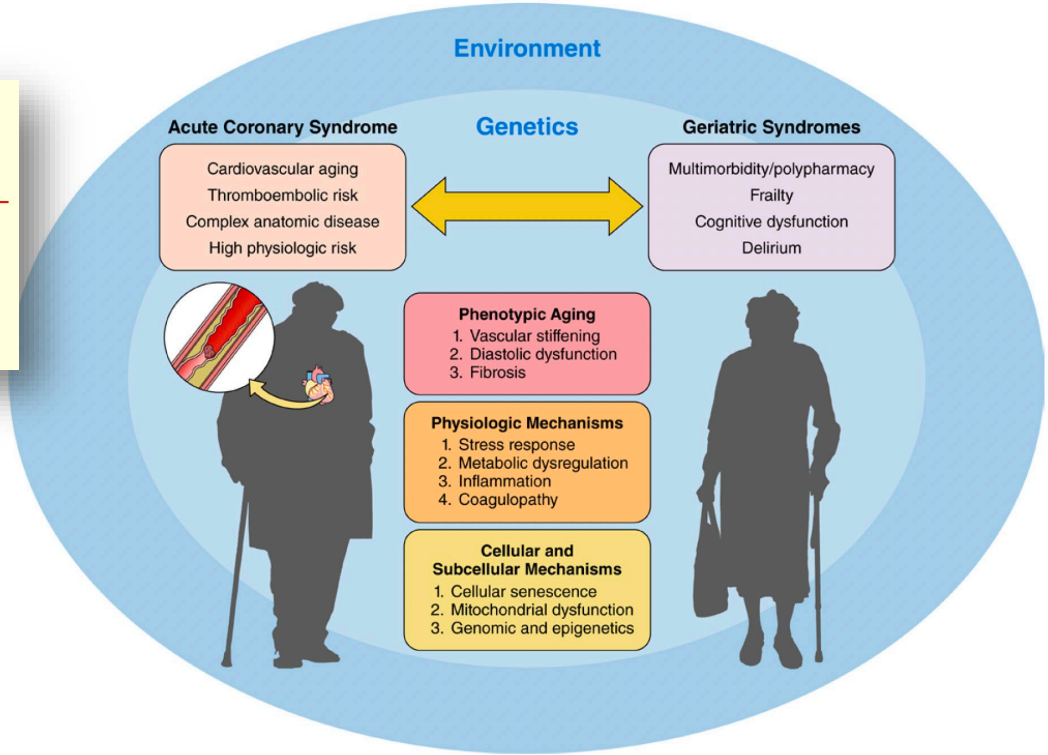
SCA

Circulation

AHA SCIENTIFIC STATEMENT

Management of Acute Coronary Syndrome in the Older Adult Population: A Scientific Statement From the American Heart Association



A.A Damluji, Circulation 2023

Coronaropathie du sujet âgé

Contemporary Revascularization Dilemmas in Older Adults

Sonali Kumar, MD; Michael McDaniel, MD; Habib Samady, MD; Farshad Forouzandeh, MD, PhD

S. Kunar, JAHA 2020

Specific Consideration Regarding Obstructive CAD in Older Adults	
Importance	Older adults many times do not receive evidence-based, especially life-saving interventions for obstructive CAD, due to the lack of knowledge, confidence, and data
ACS Presentation	Older adults commonly have atypical symptoms such as atypical chest pain, nausea, vomiting, generalized weakness as presenting symptoms of ACS leading to delay in timely diagnosis
ACS Management	Despite increased prevalence of high risk features such as heart failure, diabetes, and higher GRACE scores in the elderly, invasive procedures are not offered to many older adults while evidence show that many of them can benefit from such procedures even when presenting with cardiogenic shock.
Stent type	Studies suggest, among elderly, DESs should be the preferred over BMSs even if short duration of DAPT is desired for specific reasons, i.e. bleeding risks.
Concomitant Anticoagulation	Due to increased prevalence of AF in older age, need for long-term anticoagulation is common at this age group. However, limited data is available for the best strategy of concomitant DAPT and anticoagulation. While no guideline or FDA recommendation exist, most clinicians use short duration of triple therapy, such as 2-4 weeks, and then stop aspirin and continue with a P2Y12 inhibitor, mostly clopidogrel, and a direct oral anticoagulant.
Concomitant severe AS	The timing of PCI in relation to TAVR remains largely unclear. In one study, FFR-guided PCI prior to TAVR showed better outcome than medical therapy alone or angiographic-guided PCI.
Future Directions	Reporting safety results (to determine benefits and risk), conduction of trials exclusively including elderly patients only, and a better understanding of the frailty and cognitive impairment that affects this high-risk population will improve the enrollment rates of elderly in clinical trials and hence the care for older adults with obstructive CAD.

Coronaropathie du sujet âgé

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Evaluation de la fragilité patient **difficile en phase aiguë**

Responsabilité urgentiste/ SAMU

Bénéfice de la revascularisation indiscutable : **utile ou futile ?**

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Coronaropathie du sujet âgé

recommandations à l'épreuve du quotidien

***Retour de congés* Aout 2023**

- **<u>Dossier sur bureau confié par chirurgien</u>**

Mr B., 99 ans, ATCD de pontages réseau gauche à 85 ans, angor très serré subocclusion ostiale CD, patient et famille très demandeurs

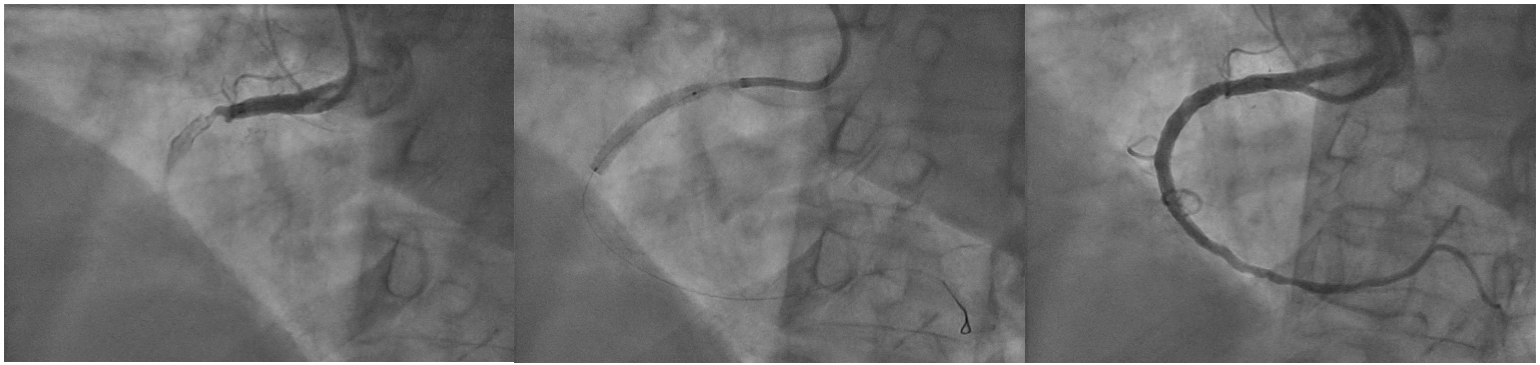
- **<u>Première astreinte du WE, 1h du matin</u>**

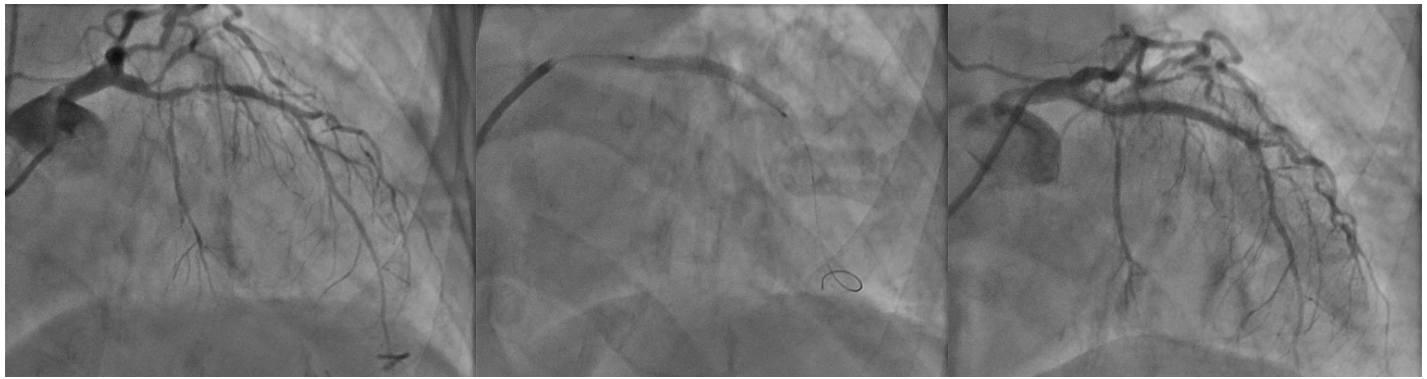
Mme F. 92 ans, obèse, autonome à domicile, SCA ST+ inférieur, BAV complet, hémodynamique instable

Coronaropathie du sujet âgé

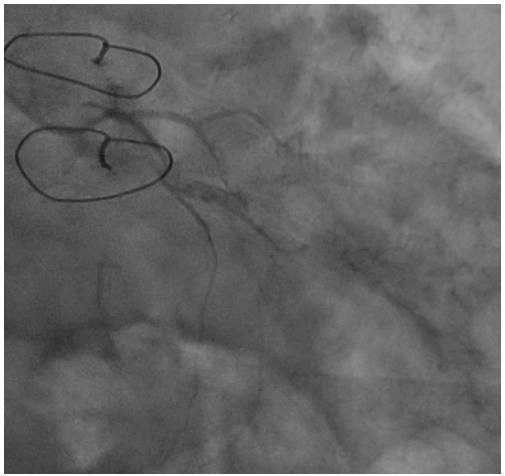
Cas de Mme F. 92 ans

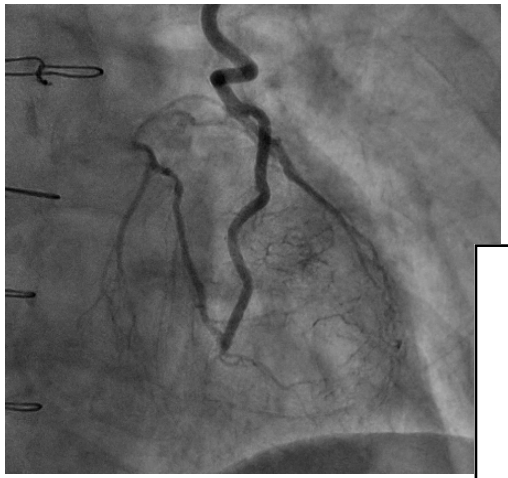
SCA ST+ inférieur, BAV, Killip 3





Coronaropathie du sujet âgé





Cas de Mr B. 99 ans

Ponté à 85 ans, reprend un AE serré

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Coronaropathie du sujet âgé

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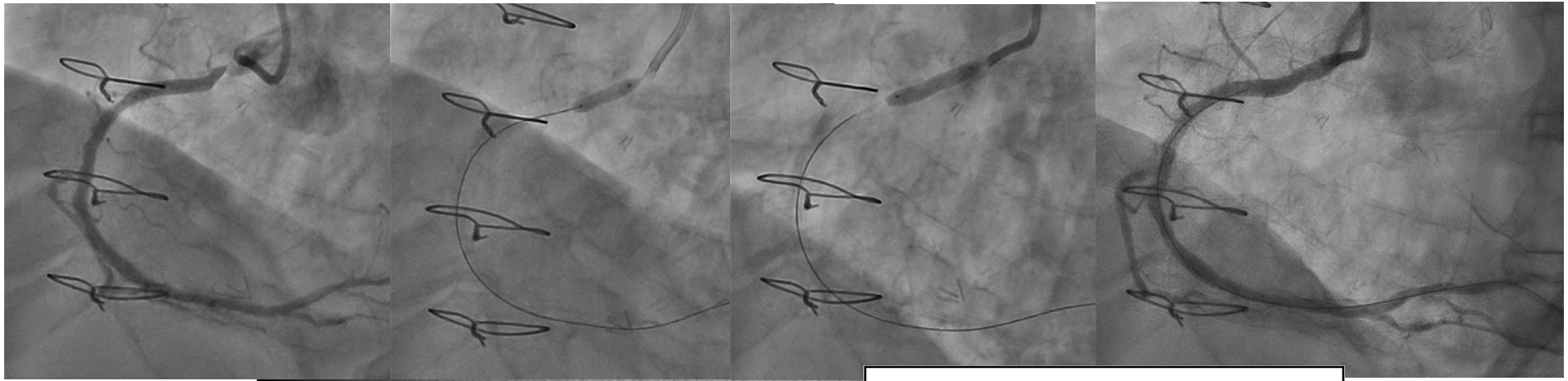

Cas de Mr B. 99 ans

Coronaropathie du sujet âgé

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Take Home Message

- Idéalement **même prise en charge** que l'ensemble de la population… mais **patients plus fragiles, procédures plus complexes**

- Evaluer la balance bénéfice/risque
- Nécessité d'informer le patient et les proches du surrisque
- Formation aux procédures complexes et à la gestion des complications

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Coronaropathie du sujet âgé

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Take Home Message

« Il ne faut pas ajouter
des années à la vie,
il faut ajouter
de la vie aux années. »

- André Malraux