Qui revasculariser avant quelle chirurgie (non cardiaque)?

Quid des antiagrégants?

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Mise à jour 2008 des recommandations
du bilan pré anesthésique
Samedi 29 novembre 2008

La question est triple

✓Quels patients revasculariser?

- **Statut clinique et/ou test fonctionnels**
- **Nature et contexte de la chirurgie envisagée**

✓Quand les revasculariser?

- **Statut clinique et/ou test fonctionnels**
- **Nature et contexte de la chirurgie envisagée: urgence exclue (risque X2 5, Mangano Anesthesiology 1990)**

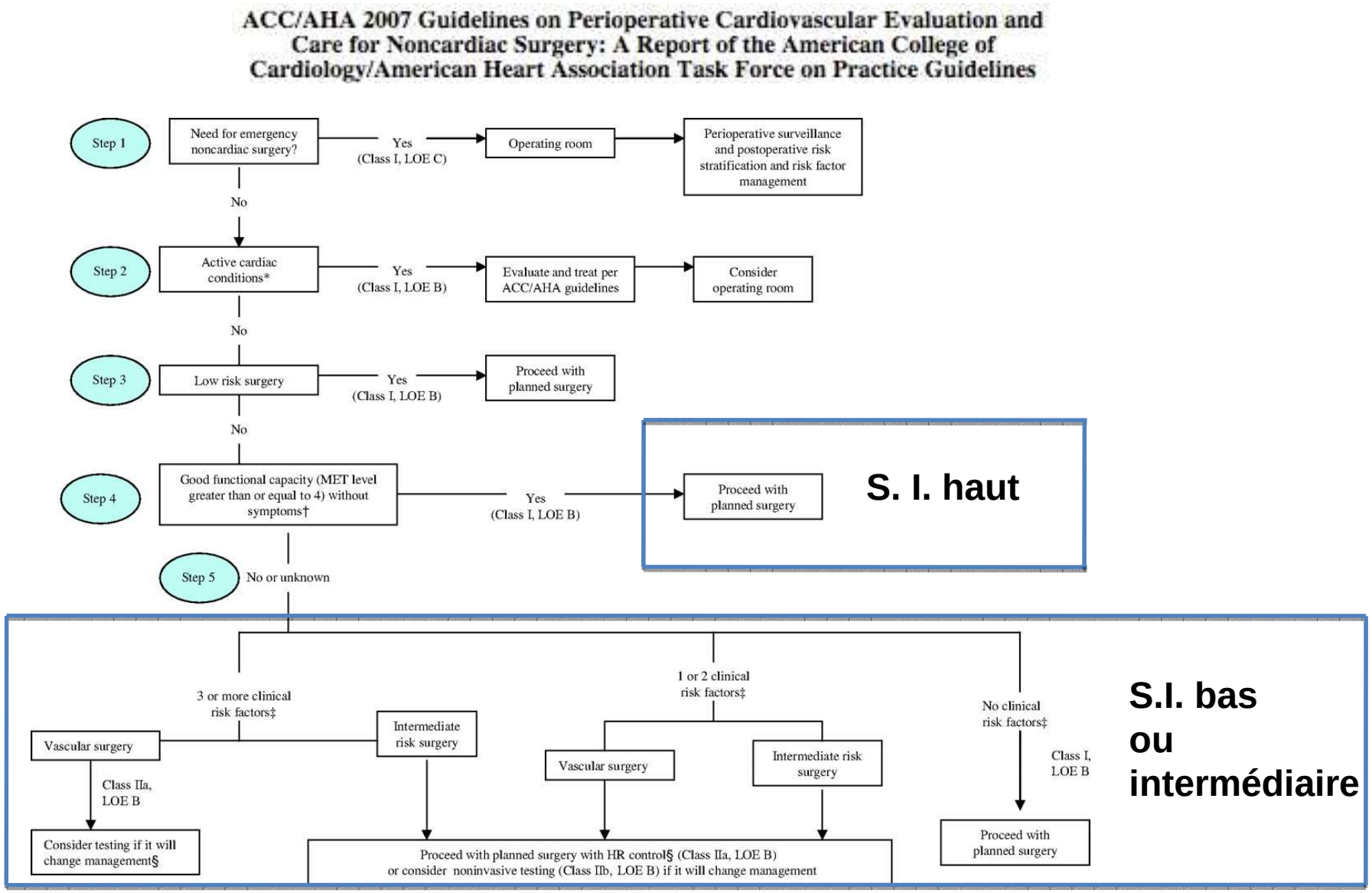
✓Comment les revasculariser?

- **Nature et contexte de la chirurgie envisagée**

C’est une question à « tiroirs »

- ✓Quel est le statut clinique?
- ✓Pourquoi a-t’on fait une coronarographie?
- ✓**Résultats des tests fonctionnels +++: notion de seuil ischémique (SI)?**
- ✓Quelle est la chirurgie envisagée, sa nature et son contexte? (**risque cardiaque et/ou risque hémorragique**)
- ✓Quels sont « l’environnement » et l’habitude de l’équipe chirurgicale concernée?

Cardiac Evaluation and Care Algorithm for non cardiac surgery



Quel bilan cardiaque avant chirurgie programmée?

Recommendations for Preoperative Resting 12-Lead ECG

Class I

1. Preoperative resting 12-lead ECG is recommended for patients with at least 1 clinical risk factor* who are undergoing vascular surgical procedures. (*Level of Evidence: B*)
2. Preoperative resting 12-lead ECG is recommended for patients with known CHD, peripheral arterial disease, or cerebrovascular disease who are undergoing intermediate-risk surgical procedures. (*Level of Evidence: C*)

Class IIa

1. Preoperative resting 12-lead ECG is reasonable in persons with no clinical risk factors who are undergoing vascular surgical procedures. (*Level of Evidence: B*)

Class IIb

1. Preoperative resting 12-lead ECG may be reasonable in patients with at least 1 clinical risk factor who are undergoing intermediate-risk operative procedures. (*Level of Evidence: B*)

Class III

1. Preoperative and postoperative resting 12-lead ECGs are not indicated in asymptomatic persons undergoing low-risk surgical procedures. (*Level of Evidence: B*)

Recommendations for Noninvasive Stress Testing Before Noncardiac Surgery

Class I

1. Patients with active cardiac conditions (see Table 2) in whom noncardiac surgery is planned should be evaluated and treated per ACC/AHA guidelines† before noncardiac surgery. (*Level of Evidence: B*)

Class IIa

1. Noninvasive stress testing of patients with 3 or more clinical risk factors and poor functional capacity (less than 4 METs) who require vascular surgery‡ is reasonable if it will change management. (*Level of Evidence: B*)

Class IIb

1. Noninvasive stress testing may be considered for patients with at least 1 to 2 clinical risk factors and poor functional capacity (less than 4 METs) who require intermediate-risk noncardiac surgery if it will change management. (*Level of Evidence: B*)
2. Noninvasive stress testing may be considered for patients with at least 1 to 2 clinical risk factors and good functional capacity (greater than or equal to 4 METs) who are undergoing vascular surgery. (*Level of Evidence: B*)

Class III

1. Noninvasive testing is not useful for patients with no clinical risk factors undergoing intermediate-risk noncardiac surgery. (*Level of Evidence: C*)
2. Noninvasive testing is not useful for patients undergoing low-risk noncardiac surgery. (*Level of Evidence: C*)

Complications cardiaques…

Risque de complications cardiaques	Type de chirurgie non cardiaque
Élevé (> 5 %)	Chirurgie en urgence, surtout chez le sujet âgé
	Chirurgie aortique ou autre chirurgie vasculaire majeure
	Chirurgie vasculaire périphérique
	Chirurgie de longue durée avec importantes variations volémiques
Intermédiaire (1-5 %)	Endartérectomie carotidienne
	Chirurgie de la tête ou du cou
	Chirurgie intrapéritonéale ou thoracique
	Chirurgie orthopédique majeure
	Chirurgie de la prostate
Faible (< 1 %)	Endoscopie
	Intervention superficielle
	Chirurgie de la cataracte
	Chirurgie du sein

Risk Level	Ischemic Response Gradient
High	Ischemia induced by low-level exercise* (less than 4 METs or heart rate less than 100 bpm or less than 70% of age-predicted heart rate) manifested by 1 or more of the following: Horizontal or downsloping ST depression greater than 0.1 mV ST-segment elevation greater than 0.1 mV in noninfarct lead Five or more abnormal leads Persistent ischemic response greater than 3 minutes after exertion Typical angina Exercise-induced decrease in systolic blood pressure by 10 mm Hg
Intermediate	Ischemia induced by moderate-level exercise† (4 to 6 METs or heart rate 100 to 130 bpm [70% to 85% of age-predicted heart rate]) manifested by 1 or more of the following: Horizontal or downsloping ST depression greater than 0.1 mV Persistent ischemic response greater than 1 to 3 minutes after exertion Three to 4 abnormal leads
Low	No ischemia or ischemia induced at high-level exercise† (greater than 7 METs or heart rate greater than 130 bpm [greater than 85% of age-predicted heart rate]) manifested by: Horizontal or downsloping ST depression greater than 0.1 mV One or 2 abnormal leads
Inadequate test	Inability to reach adequate target workload or heart rate response for age without an ischemic response. For patients undergoing noncardiac surgery, the inability to exercise to at least the intermediate-risk level without ischemia should be considered an inadequate test.

… et hémorragiques

Endoprothèse Coronaire (EC) Pharmaco-active	Risque hémorragique de l'intervention (à évaluer avec le responsable du geste invasif ou le chirurgien)		
Risque de thrombose du stent (à évaluer avec le cardiologue)	**Majeur**	**Intermédiaire**	**Mineur**
Majeur	Reporter l'intervention au-delà de 6 mois à 1 an après la pose de l'EC si impossible : Arrêt aspirine-clopidogrel 5 jours ou Arrêt aspirine-clopidogrel 10 jours maxi et substitution	Reporter l'intervention au-delà de 6 mois à 1 an après la pose de l'EC si impossible : Maintien aspirine Arrêt clopidogrel 5 jours	Maintien aspirine et clopidogrel
Modéré	Arrêt aspirine-clopidogrel 5 jours ou Arrêt aspirine-clopidogrel 10 jours maxi et substitution	Maintien aspirine Arrêt clopidogrel 5 jours	Maintien aspirine et clopidogrel ou Maintien aspirine Arrêt clopidogrel 5 jours

Risque hémorragique:
Majeur: Intervention ne pouvant être réalisée sous AAP
Modéré: Intervention réalisable sous ASA seule
Mineur: Intervention réalisable sous ASA et Clopidogrel

Risque de thrombose d'EC pharmaco-active
Majeur: Mise en place depuis moins de 6 mois à 1 an ou patient nécessitant un traitement par aspirine-clopidogrel ou patient avec facteur de risque
Modéré: Mise en place depuis plus de 6 mois à 1 an

Dans tous les cas, l'intervention doit être reportée au-delà de 6 semaines d'un syndrome coronaire aigu dans la mesure du possible

Gestion des traitements des antiplaquettaires par voie orale chez les patients porteurs d'endoprothèses coronaires (Propositions du groupe d'experts, 31 mars 2006)

Indications de revascularisation avant chirurgie non cardiaque

ACC/AHA 2007 Guidelines on Perioperative Cardiovascular Evaluation and Care for Noncardiac Surgery: A Report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines

Class I

1. Coronary revascularization before noncardiac surgery is useful in patients with stable angina who have significant left main coronary artery stenosis. (*Level of Evidence: A*)
2. Coronary revascularization before noncardiac surgery is useful in patients with stable angina who have 3-vessel disease. (Survival benefit is greater when LVEF is less than 0.50.) (*Level of Evidence: A*)
3. Coronary revascularization before noncardiac surgery is useful in patients with stable angina who have 2-vessel disease with significant proximal LAD stenosis and either EF less than 0.50 or demonstrable ischemia on noninvasive testing. (*Level of Evidence: A*)
4. Coronary revascularization before noncardiac surgery is recommended for patients with high-risk unstable angina or non–ST-segment elevation MI.§ (*Level of Evidence: A*)
5. Coronary revascularization before noncardiac surgery is recommended in patients with acute ST-elevation MI. (*Level of Evidence: A*)

USEFUL

Class IIa

1. In patients in whom coronary revascularization with PCI is appropriate for mitigation of cardiac symptoms and who need elective noncardiac surgery in the subsequent 12 months, a strategy of balloon angioplasty or bare-metal stent placement followed by 4 to 6 weeks of dual-antiplatelet therapy is probably indicated. (*Level of Evidence: B*)
2. In patients who have received drug-eluting coronary stents and who must undergo urgent surgical procedures that mandate the discontinuation of thienopyridine therapy, it is reasonable to continue aspirin if at all possible and restart the thienopyridine as soon as possible. (*Level of Evidence: C*)

Class IIb

1. The usefulness of preoperative coronary revascularization is not well established in high-risk ischemic patients (e.g., abnormal dobutamine stress echocardiograph with at least 5 segments of wall-motion abnormalities). (*Level of Evidence: C*)
2. The usefulness of preoperative coronary revascularization is not well established for low-risk ischemic patients with an abnormal dobutamine stress echocardiograph (segments 1 to 4). (*Level of Evidence: B*)

APPROPRIATE

Class III

1. It is not recommended that routine prophylactic coronary revascularization be performed in patients with stable CAD before noncardiac surgery. (*Level of Evidence: B*)
2. Elective noncardiac surgery is not recommended within 4 to 6 weeks of bare-metal coronary stent implantation or within 12 months of drug-eluting coronary stent implantation in patients in whom thienopyridine therapy, or aspirin and thienopyridine therapy, will need to be discontinued perioperatively. (*Level of Evidence: B*)
3. Elective noncardiac surgery is not recommended within 4 weeks of coronary revascularization with balloon angioplasty. (*Level of Evidence: B*)

NOT RECOMMANDED

Clinical relevance of aspririn resistance

Gum et al., J. Am Coll Cardiol 2003; 41: 961-5

- ✓n= = 36
- ✓Stable CVD
- ✓325 ASA
- ✓F/U 679 ± 185 days

RESISTANT (n=17, 5.2%)

RESPONSIVE (n=309, 94.8%)

DEATH
MI
CVA

24%

10%

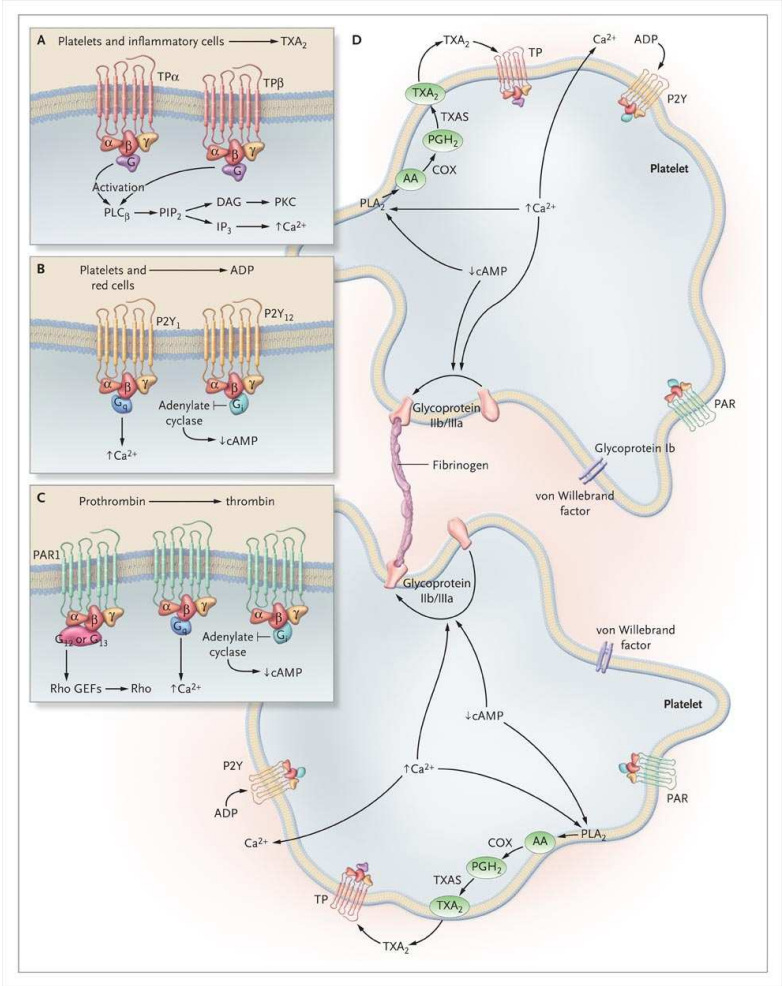
The NEW ENGLAND JOURNAL of MEDICINE

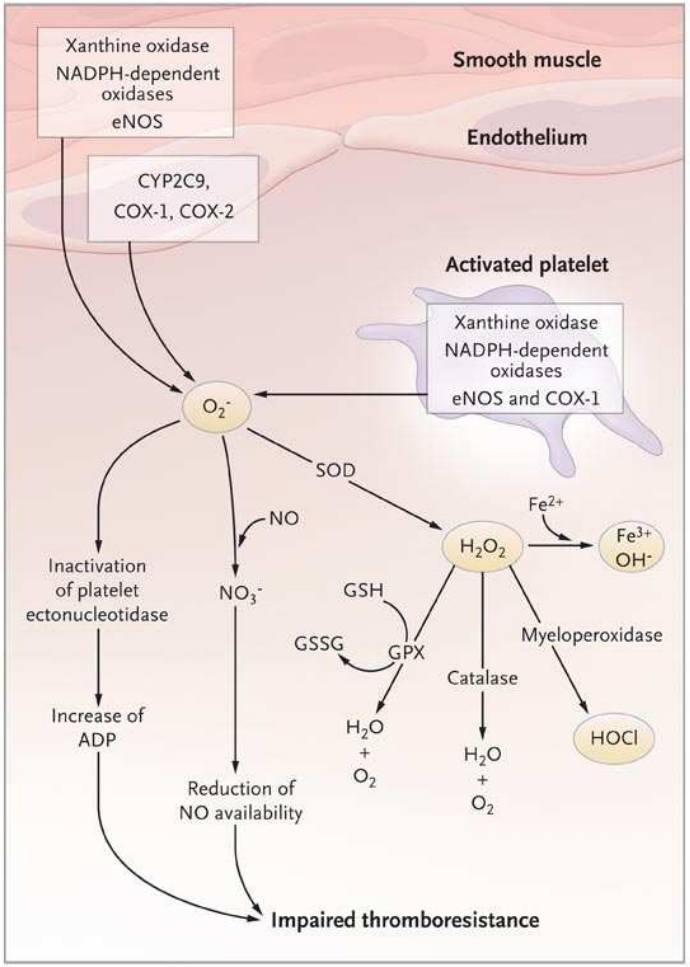
REVIEW ARTICLE

MECHANISMS OF DISEASE

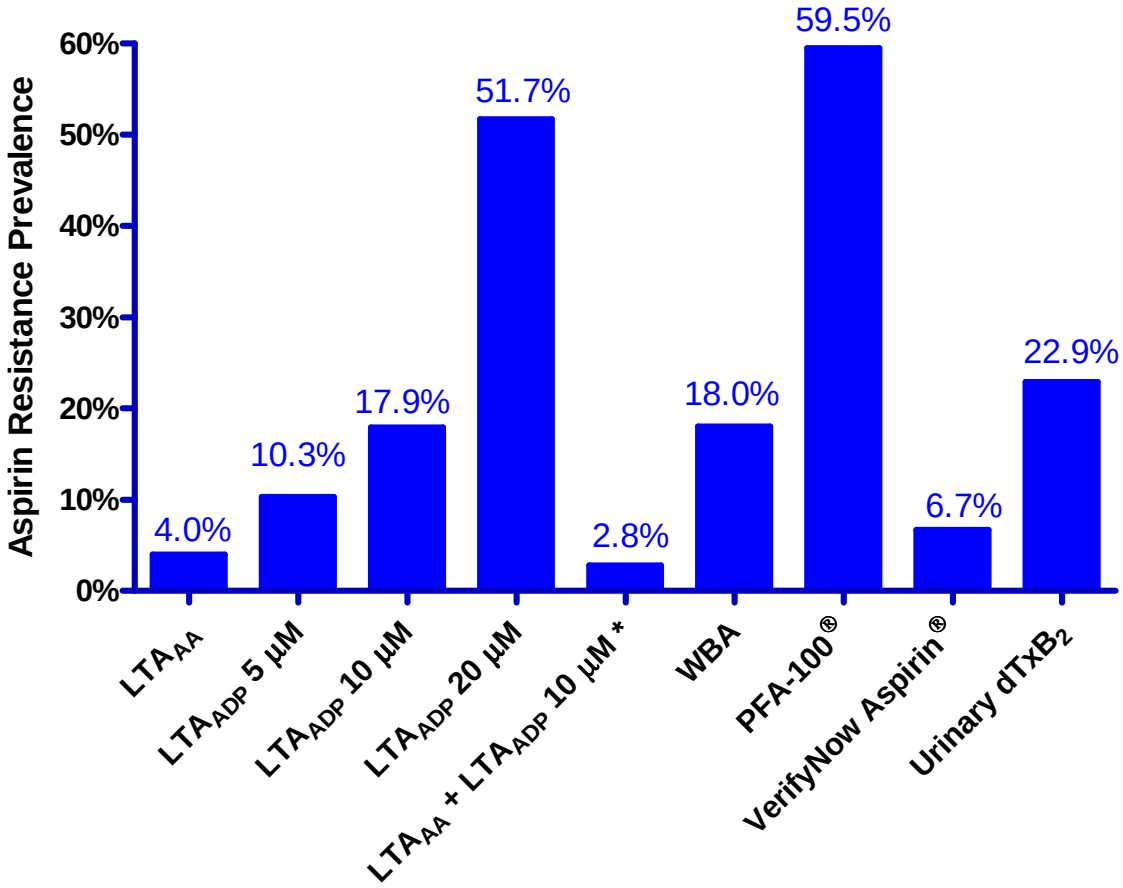
Platelet Activation and Atherothrombosis

Giovanni Davì, M.D., and Carlo Patrono, M.D.





La prévalence de la résistance à l'ASA varie (entre autre) selon le type de test de fonction plaquettaire utilisé



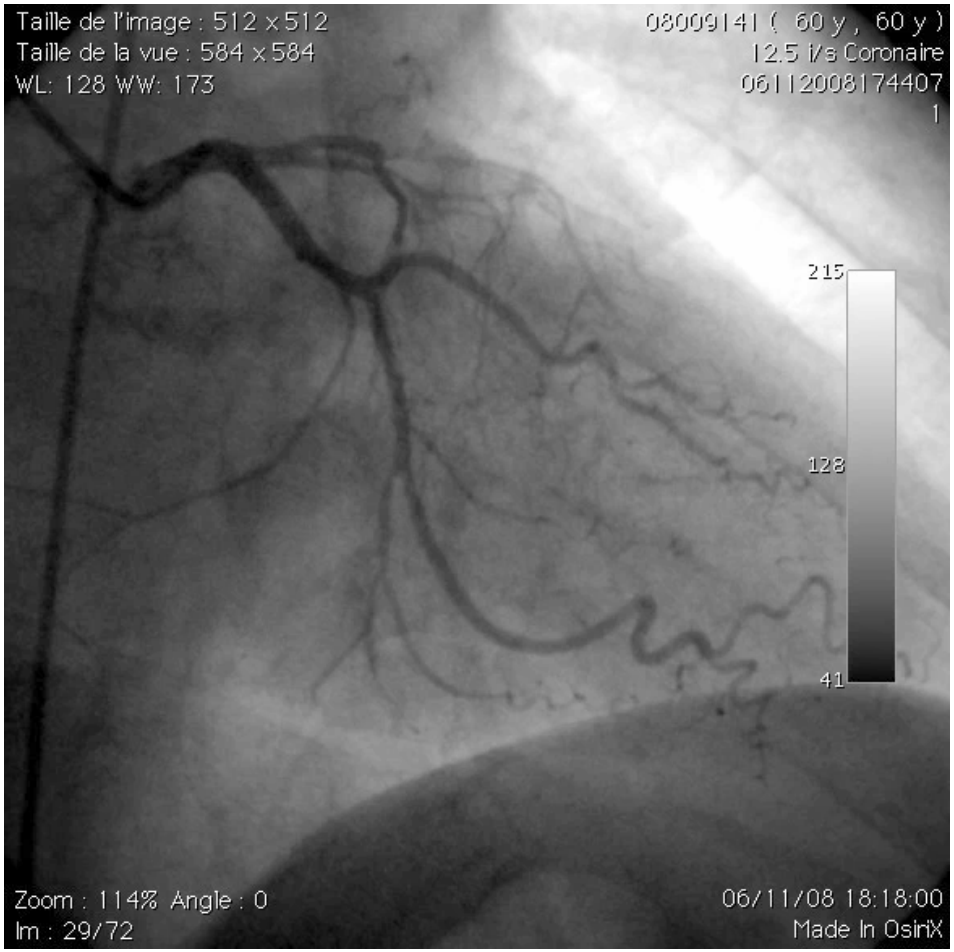
PFA 100

Excellent technique, reproductible, rapide

Excellente corrélation avec l’agrégométrie standart

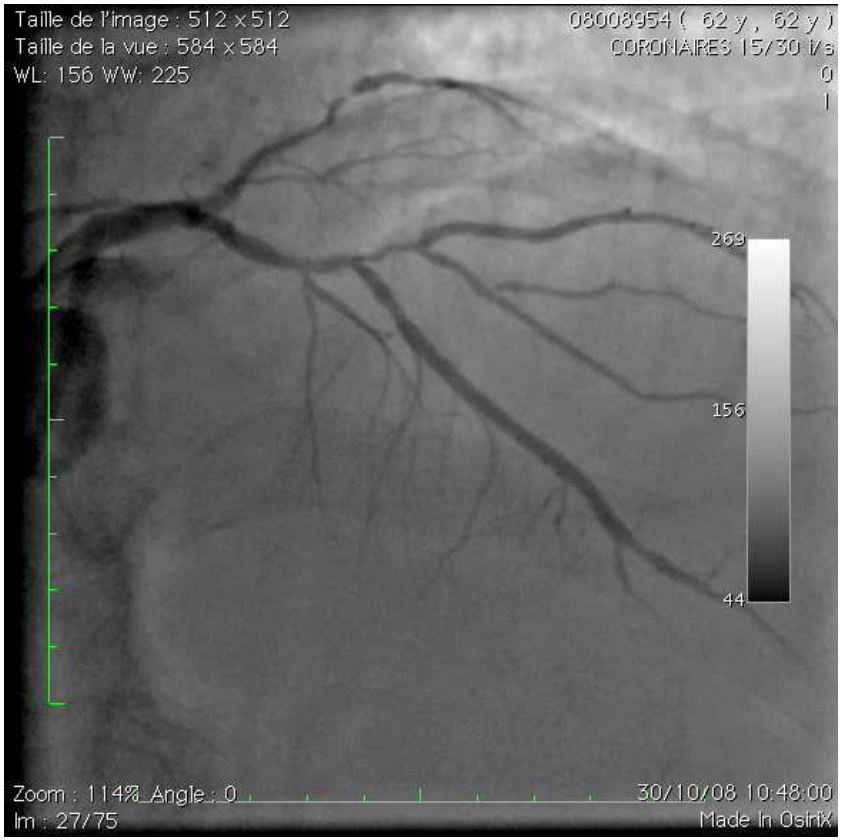
Exemple numéro 1

- ✓Homme 60 ans
- ✓Tabac, HTA
- ✓AOMI opérée
- ✓Echo effort + en antérieur (SI 85%)
- ✓PTH gauche prévue
- ✓Thrombose IVA



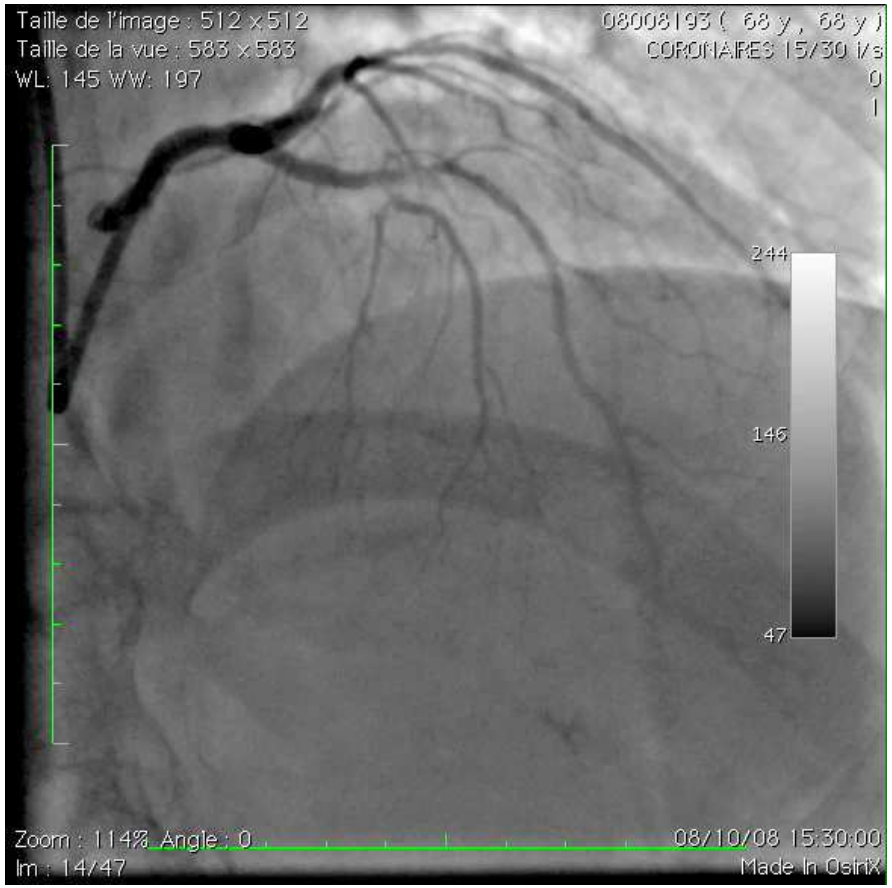
Exemple numéro 2

- ✓Homme 62 ans
- ✓Tabac, cholestérol
- ✓SCA ST- tropo- il y a 12 sem. (TT médical)
- ✓Chir. adénome prostate prévue
- ✓Echo. effort + (SI 60%)
- ✓Atteinte bitronculaire



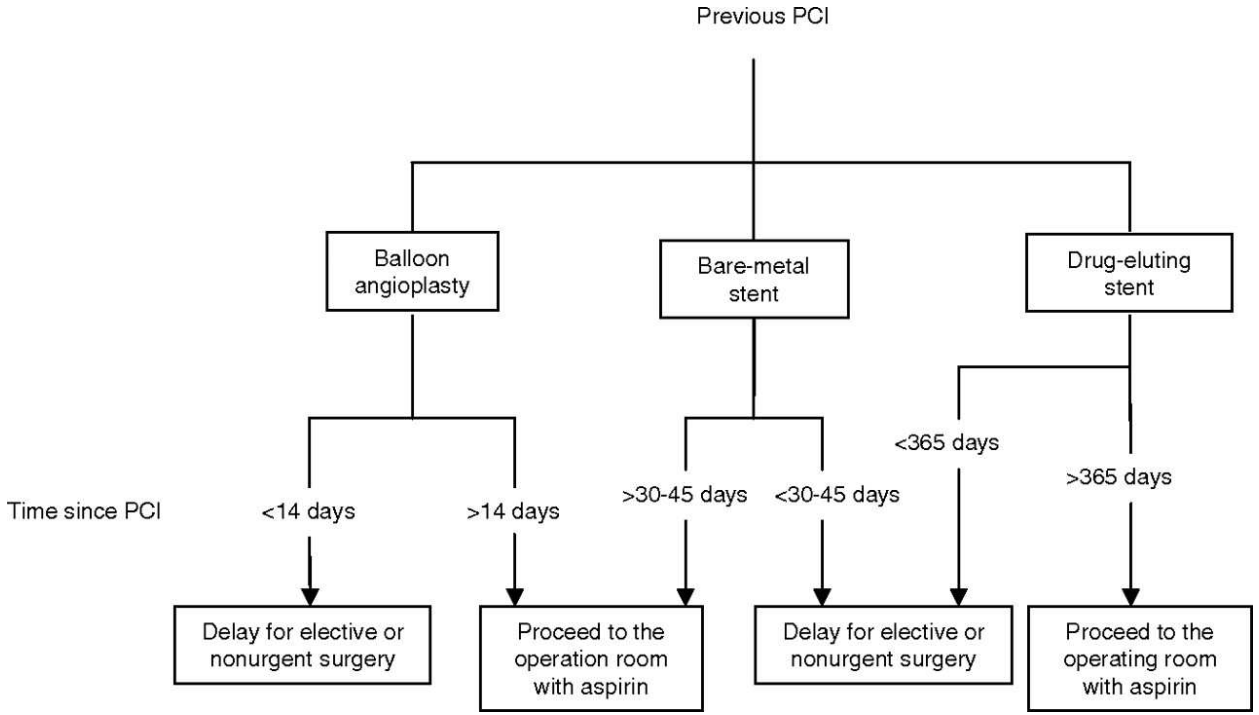
Exemple numéro 3

- ✓Femme 74 ans
- ✓Diabète, surpoids
- ✓Angor stable
- ✓Echo effort + ant. (SI 80%)
- ✓PTG programmée
- ✓Sténose serrée IVA et septale



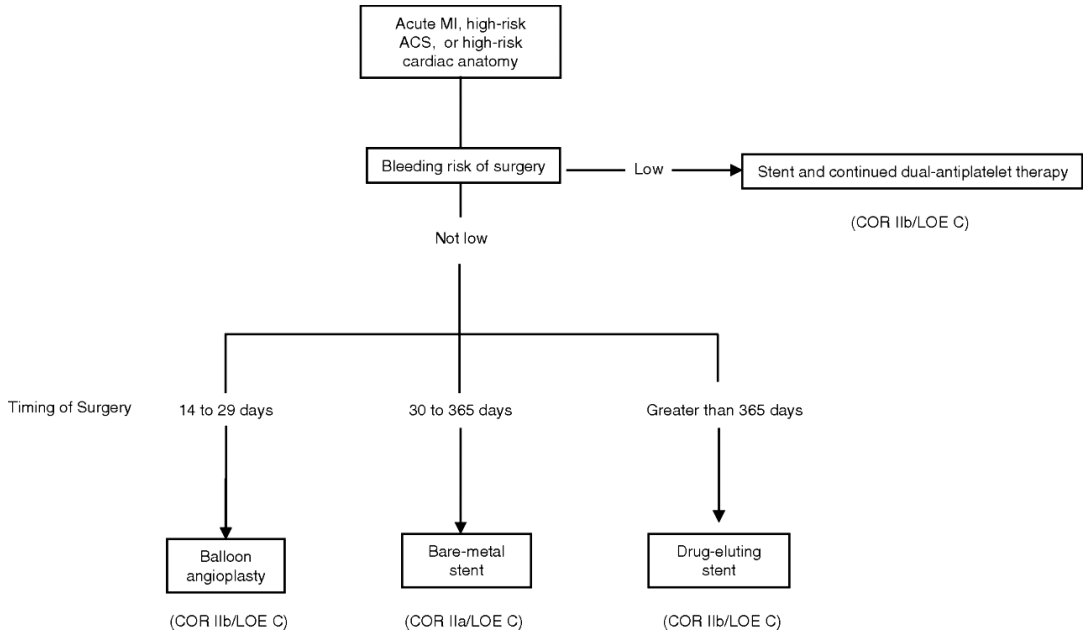
Exemple numéro 4

- ✓Femme 76 ans
- ✓Diabète, HTA, surpoids, cholestérol
- ✓Arrêt ASA pour colo.
- ✓Colectomie planifiée
- ✓SCA ST- tropo+ J6
- ✓Atteinte 2T sévère
- ✓Décision pontages



Gestion des pts ayant un antécédent d'angioplastie coronaire

Gestion des pts devant bénéficier d'une angioplastie coronaire avant chirurgie planifiée



Proposition de synthèse

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<tr><th></th><th colspan="2">Risque CV élevé</th><th colspan="2">Risque CV intermédiaire</th><th colspan="2">Risque CV bas</th></tr>
<tr><td rowspan="2">SI bas
> 5 seg.</td><td rowspan="2">REVASC</td><td>CHIR</td><td rowspan="2">REVASC</td><td>CHIR</td><td rowspan="2">REVASC</td><td>CHIR</td></tr>
<tr><td>ATC</td><td>ATC</td><td>ATC</td></tr>
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1 à 4 seg.</td><td rowspan="2">REVASC</td><td rowspan="2">CHIR</td><td rowspan="2">REVASC</td><td>CHIR</td><td colspan="2" rowspan="2">REVASC IIère</td></tr>
<tr><td>ATC</td></tr>
<tr><td rowspan="2">SI élevé</td><td rowspan="2">REVASC</td><td>CHIR</td><td colspan="2" rowspan="2">REVASC IIère</td><td colspan="2" rowspan="2">MEDICAL</td></tr>
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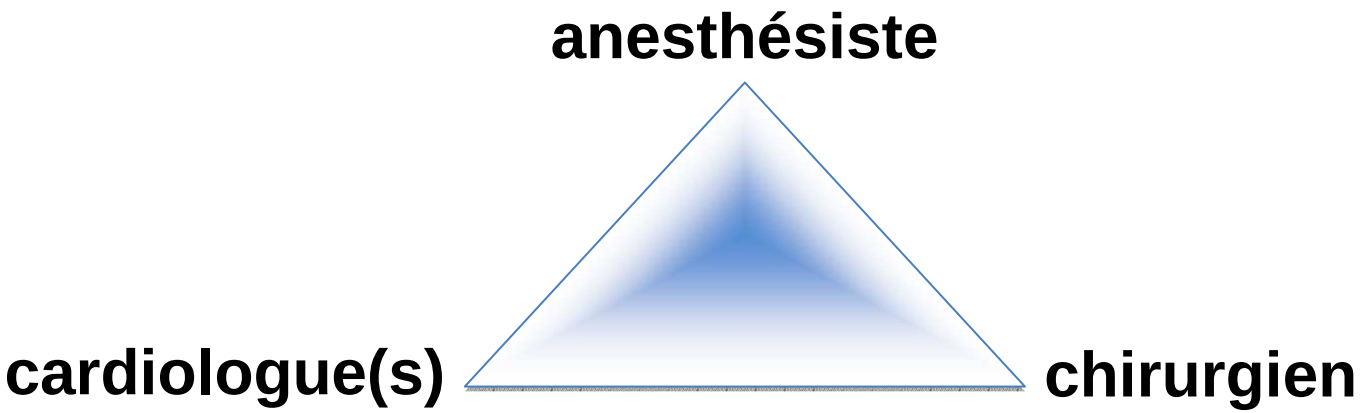
En conclusion

- ✓La clinique, la clinique, la clinique
- ✓Les tests fonctionnels, ischémiques et plaquettaires
- ✓Le dialogue, le dialogue, le dialogue