



Revascularisation coronarienne hybride

3 novembre 2015 : Amicale des Cardiologues de la Cote d'Azur



DEFINITIONS de « HYBRIDE »

+ Véhicule équipé de 2 types de motorisation



+ Ou alors



....QUI PROVIENT D'UN CROISEMENT ENTRE 2 ESPÈCES, RACES OU VARIÉTÉS DISTINCTES....





POURQUOI LA REVASCULARISATION CORONARIENNE HYBRIDE ?

2 PRINCIPES DE BASE

Revascularisation chirurgicale artérielle exclusive
Revascularisation la plus complète possible

1 PRINCIPE SUPPLEMENTAIRE

Toucher le moins possible l'aorte (patients âgés)



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Catheter Cardiovasc Interv. 2010 Mar 1;75 Suppl 1:S28-34.

Hybrid myocardial revascularization: an integrated approach to coronary revascularization.

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Coronary artery bypass surgery is beneficial in patients with complex coronary artery disease. The longevity of the left internal mammary artery (LIMA) placed to the left anterior descending (LAD) artery (LIMA-LAD) is between 92-99% at 15 years, and contributes

long-term patency of saphenous vein grafts (SVGs) commonly used (50%) in surgical revascularization procedures, is less well documented. **to 26% of SVGs failing in the first year.** In selected patients, particularly in those patients with vessels poorly suited to SVGs, **hybrid** myocardial revascularization (HMR) has been used, combining a minimally invasive **approach** to the LIMA-LAD with drug-eluting stent placement of the non-LAD vessels. The advantages and disadvantages of **hybrid** myocardial revascularization are reviewed in this report.

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Arch Cardiovasc Dis. 2010 Oct;103(10):502-11. Epub 2010 Nov 10.

Hybrid revascularization, comprising coronary artery bypass graft with exclusive arterial conduits followed by early drug-eluting stent implantation, in multivessel coronary artery disease.

Delhaye C, Sudre A, Lemesle G, Vanesson L, Koussa M, Fayad G, Bauters C, Lablanche JM, Modine T.

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hybrid myocardial revascularization strategy combining "exclusive arterial" conventional coronary artery bypass grafting (CABG) followed by early drug-eluting stent (DES) implantation in multivessel coronary artery disease (CAD).

(CABG) coronary artery with or without right IMA to non-LAD vessel in an open chest approach. DESs were implanted systematically in an additional vessel after a clopidogrel 300-mg preloading dose. This group was compared with 18 matched patients who underwent standard CABG alone using left IMA to LAD and at least one additional graft.

RESULTS: Baseline clinical characteristics were similar in both groups. There were 46 grafts in the CABG group and 28 in the **hybrid** group. In the **hybrid** group, 27.8% of patients were treated off-pump versus none in the CABG group; a median of 2 (interquartile range: 1-2) stents was implanted per patient. The **hybrid** procedure was associated with shorter durations of cardiopulmonary bypass (77 [67-100] min versus 97 [90-105] min, $P=0.049$). Major bleeding rates were higher in the CABG group, but the difference was not statistically significant (44.4% versus 11.1%, $P=0.06$). Re-intervention for bleeding was not needed in either group. One (5.6%) myocardial infarction occurred in hospital in each group following CABG. At 1 year, the cumulative rates of major adverse cardiac events (death, myocardial infarction, target vessel revascularization) were similar (11.2% in **hybrid** group versus 5.6% in CABG group, $P=0.99$). One death occurred in the CABG group and one target vessel revascularization in the **hybrid** group.

CONCLUSION: A **hybrid** revascularization strategy, combining conventional CABG with exclusive arterial conduits followed by early DES implantation, is feasible. One-year event rates compare favourably to those with traditional CABG alone.

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COMMENT LA REVASCULARISATION CORONARIENNE HYBRIDE ?

2 PRINCIPES DE BASE

(dans la mesure du possible)

Revascularisation par les 2 AMI sur le réseau gauche

Endoluminale sur le réseau droit

POURQUOI ?



Improved Survival With Multiple Left-Sided Bilateral Internal Thoracic Artery Grafts

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Background. Although conceptually sound, the use of multiple internal thoracic artery (ITA) bypass grafts to improve long-term clinical results remains controversial. This operation typically involves grafting the left ITA to the anterior descending artery and the right ITA to the right coronary artery. Past clinical studies of bilateral ITA operations have not examined complications associated with which coronary arteries bypass grafts. Because grafting a supra-artery of lesser physiologic importance may yield clinical benefits, we compared the outcomes of patients receiving different configurations of ITA operations.

Methods. The study group was 498 patients who underwent bilateral ITA operations, constituting the largest series of a single surgeon. Follow-up averaged 7.1 years (mode 7.3 years), and was 94.2% complete. These patients were divided into two groups, 311 patients (group I) who underwent the traditional operation (left ITA to the left anterior descending artery, right ITA to the right coro-

Results. The study groups were similar in age, severity of disease, number of bypassed arteries, ejection fraction, diabetes, hypertension, and duration of operation. There were more male patients in group II (91.4% versus 82.3%). A multivariate analysis showed that the location of ITA bypass grafts influenced survival independent of gender

The Kaplan-Meier actuarial survival estimate demonstrated a significant improvement in survival of patients in group II who received both ITA bypass grafts to left-sided arteries ($p = 0.021$), with the survival curves diverging at 6 years.

Association class I or II, but the difference was not statistically significant (94.6% versus 91.6%). Only 2 patients required reoperation.

Conclusions. It appears that maximum long-term benefit from bilateral ITA operations is achieved by grafting coronary arteries that supply more

187 patients (group II) who received revascularization of branches of the left coronary artery (left ITA to the circumflex system and right ITA to the left anterior descending artery).

(Ann Thorac Surg 1997;64:9-15)
The Society of Thoracic Surgeons



COMMENT LA REVASCULARISATION CORONARIENNE HYBRIDE ?

Ordre et Délais

L'ordre donne les délais

En fonction de la notion d'Hybride réglé ou d'Hybride forcé selon qu' il existe une lésion coupable à traiter immédiatement ou non



COMMENT LA REVASCULARISATION CORONARIENNE HYBRIDE ?

Ordre et Délais

* Si Chirurgie Première :

Ablation des drains J 2 - début anti-aggrégation puis traitement endoluminal à partir de J 10 ou plutôt à 1 mois, sauf si bilan inflammatoire trop perturbé.

* Si Traitement Endoluminal Premier :

- Nu : 4 semaines – AA sauf Aspirine Stop à J - 2 chirurgie
- Actif : 3 mois – AA sauf Aspirine Stop à J - 2 chirurgie
- dans les 2 cas, Reprise AA à J 1



EXPERIENCE CCM

* Depuis 5 ans :

- Initiation de cette stratégie avec l'équipe de St George :86 %
- Autres équipes (Antibes, CHU) : 14 %

* 60 patients

* Sur un total de 825 revascularisations coronariennes chirurgicales artérielles exclusives pour la même période.



RESULTATS EXPERIENCE

* Petite série

* Pas de valeur statistique mais quelques orientations

+ Age moyen : 72 ans

+ 50 H /10 F

+ Nombre moyen de pts : 3,1

+ CA moyen : 38 min, durée CEC moyen : 49 min

+ Saignement post J1 moyen : 330 cc (anti-aggrégant)

+ Durée de VA moyen : 5 h



RESULTATS EXPERIENCE : 2

- + Mortalité nulle
- + Pas d'IDM
- + Aucune anticipation de l'angioplastie après chirurgie (pour ischémie post CEC)
- + Aucune anticipation de la chirurgie après angioplastie (pour ischémie du réseau controlatéral du réseau à ponter)
- + **2 échecs** : angioplastie première puis pontages : récurrence d'angor sur le réseau ponté (AMI peu développées et peu fonctionnelles) => angioplasties complémentaires



CONCLUSIONS

- * **Ne pas perdre de vue quelques principes :**
 - Revascularisation artérielle exclusive, la plus complète possible,
 - Toucher le moins possible l'aorte (problème des pts veineux / patients âgés)
- * **Collaboration, entente et confiance médico chirurgicale +++**
- * **Premiers résultats encourageants**
- * **Excellente approche de la coronaropathie pluritronculaire.**

Merci pour votre attention.

