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CLINICAL RESEARCH

In-hospital and long-term outcomes after percutaneous coronary intervention for chronic total occlusion in elderly patients: A consecutive, prospective, single-centre study

Résultats à court et moyen termes après angioplastie d'une occlusion coronaire chronique chez des patients âgés : données issues d'une cohorte monocentrique prospective

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KEYWORDS
Percutaneous coronary intervention;
Outcomes;
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Age

Summary
Background. — Elderly patients are increasingly referred for complex percutaneous coronary interventions (PCI), including recanalization of chronic total occlusion (CTO).
Aims. — To assess the feasibility, safety and clinical benefits associated with CTO-PCI in elderly patients.
Methods. — Consecutive patients ($n = 356$) who underwent CTO-PCI in our institution between January 2008 and December 2011 were prospectively included. The short-term outcomes of CTO-PCI were assessed by comparing the rates of successful recanalization and postoperative

Abbreviations: ACS, acute coronary syndrome; CAD, coronary artery disease; CTO, chronic total occlusion; MACCE, major adverse cardiac or cerebrovascular event; MACE, major adverse cardiac event; PCI, percutaneous coronary intervention.

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complications in patients aged ≥75 years and those <75 years. The clinical effect of successful recanalization was evaluated in a 20-month follow-up analysis in patients ≥75 years.
Results. — Although patients ≥75 years ($n = 93$) had more complex coronary artery disease, the procedural success rate was similar to that in younger patients (78.2% vs. 74.3%, respectively; $P = 0.41$). Postoperative complications were more frequent in older patients (5.4% vs. 0.4%; $P = 0.005$). Major adverse cardiac event-free survival analysis at 20 months revealed that successful revascularization was indicative of a better prognosis in older patients (hazard ratio: 0.43, 95% confidence interval: 0.19—0.96; $P = 0.039$).
Conclusion. — Elderly patients have more complex coronary disease and are at a higher risk of postoperative complications. Nevertheless, we observed a similar success rate for CTO-PCI in elderly patients as for younger patients. Successful CTO recanalization improved the event-free survival rate at 20 months. Thus, CTO-PCI constitutes an alternative strategy for treating selected elderly patients.

MOTS CLÉS
Angioplastie ;
Occlusion coronaire chronique ;
Âgés ;
Pronostic

Résumé
Contexte. — Les patients âgés sont de plus en plus fréquemment adressés pour angioplastie de lésions coronaires complexes comme les occlusions coronaires chroniques (CTO).
Objectifs. — Évaluer la faisabilité, la sécurité et l'impact pronostique d'une tentative d'angioplastie de CTO au sein d'une population de patients âgés.
Méthodes. — Nous avons inclus les 356 patients consécutifs ayant bénéficié d'une angioplastie de CTO dans le CHU de Rangueil entre janvier 2008 et décembre 2011. À court terme, la faisabilité et la sécurité des procédures ont été évaluées en comparant le taux de succès et le taux de complication obtenus à 30 jours chez les patients de plus et de moins de 75 ans. Chez les patients ≥ 75 ans, l'impact pronostique du succès de la revascularisation a été évalué par une analyse de la morbi-mortalité à 20 mois.
Résultats. — Le taux de succès des procédures d'angioplastie de CTO n'était pas significativement différent chez les patients ≥ 75 ans ($n = 93$) et < 75 ans (74,3 % vs 78,2 % ; $p = 0,41$). Les complications post-angioplastie étaient néanmoins plus fréquentes dans le groupe ≥ 75 ans (5,4 % vs 0,4 % ; $p = 0,005$). À 20 mois, un succès de revascularisation de la CTO améliore le pronostic des patients âgés en réduisant le taux d'événements cardiovasculaires majeurs (HR : 0,43 ; IC 95 % : 0,19—0,96 ; $p = 0,039$) mais sans améliorer significativement la survie.
Conclusion. — L'angioplastie des CTO est une stratégie de revascularisation qui peut raisonnablement être proposée aux patients âgés afin d'améliorer leur pronostic cardiovasculaire à moyen terme.

Background

Life expectancy has increased in recent decades, in part due to medical advances. As a result, more elderly patients are being referred to cardiologists for treatment of coronary artery disease (CAD), but the optimal management in those aged 75 years and older is debated. Indeed, the benefits of aggressive revascularization in elderly patients have been poorly investigated in randomized trials, and numerous studies have reported a higher risk of postoperative complications [1,2] and lower procedural success rates with percutaneous coronary intervention (PCI) [3] in the elderly. Techniques have improved, however, and evidence from more recent studies has suggested that elderly patients could, paradoxically, benefit more than younger patients from appropriate interventional revascularization [4]. In clinical practice, older patients still have the lowest rates of revascularization [5] and this is especially true for elderly patients with chronic total coronary occlusion (CTO). Indeed, studies have shown that because of the lower success rates of recanalization (60—70%), a minority of patients with CTO (8—15%) are referred for PCI [6—9].

The prevalence of CTO rises with age [10] and can affect more than 30% of older patients suspected of having myocardial ischaemia [7], but there is no clear evidence on the best way to manage these patients. Indirect evidence from non-randomized studies suggests that CTO-PCI could improve survival and relieve symptoms related to myocardial ischaemia [11,12], but there is a paucity of data describing CTO-PCI among the elderly. Moreover, most studies on elderly patients were carried out 10 years ago [12] and do not take into account the recent technical improvements