BOLETIM CIENTÍFICO SBCCV

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American Heart Association Publica Atualização no Consenso de Revascularização Miocárdica na Doença Coronária Estável

ACC/AATS/AHA/ASE/ASNC/SCAI/SCCT/STS 2017 Appropriate Use Criteria for Coronary Revascularization in Patients with Stable Ischemic Heart Disease

As sociedades americanas de Cardiologia, Hemodinâmica e Cirurgia Cardiotorácica publicaram um consenso para o uso de critérios apropriados da revascularização miocárdica na angina estável. Trata-se de uma atualização do documento de 2012, agora desmembrado em 2 publicações, uma referente a síndrome coronária aguda e a presente.

Diferente de uma Diretriz clássica, este Consenso traz mais de 60 cenários clínicos reais, pontuados por um painel de 32 experts entre clínicos, intervencionistas e cirurgiões. Características clínicas, anatômicas e funcionais foram contempladas, e de forma inovadora, o tratamento com uma ou mais drogas antianginosas pesou na decisão de intervenção. Também de forma particular, os pacientes já submetidos a revascularização cirúrgica prévia foram avaliados em separado.

Ao invés da grade tradicional de evidências, em todas as tabelas, as situações são pontuadas de 1 a 3 quando consideradas inapropriadas (R), entre 4 a 6 quando controversas (M) e entre 7 a 9 quando apropriadas (A).

Também em todos os cenários clínicos avaliados, pesaram a classe de risco clínico do paciente, baseado na % de miocárdio em risco (baixo, intermediário e alto), o Syntax score e o STS score.

Vale a pena uma leitura pormenorizada, pela fácil aplicação prática que facilita a tomada de decisão terapêutica.

The rating panel scored on a scale as follows:

Score 7 to 9: **A**ppropriate care

Score 4 to 6: **M**ay be appropriate care

Score 1 to 3: **R**arely appropriate care

Table 1.1 One-Vessel Disease

Appropriate Use Score (1-9)									
One-Vessel Disease									
		Asymptomatic				**Ischemic Symptoms**			
		Not on AA Therapy or With AA Therapy		**Not on AA Therapy**		**On 1 AA Drug (BB Preferred)**		**On ≥2 AA Drugs**	
Indication		**PCI**	**CABG**	**PCI**	**CABG**	**PCI**	**CABG**	**PCI**	**CABG**
No Proximal LAD or Proximal Left Dominant LCX Involvement									
1.	■ Low-risk findings on noninvasive testing	R (2)	R (1)	R (3)	R (2)	M (4)	R (3)	A (7)	M (5)
2.	■ Intermediate- or high-risk findings on noninvasive testing	M (4)	R (3)	M (5)	M (4)	M (6)	M (4)	A (8)	M (6)
3.	■ No stress test performed or, if performed, results are indeterminate ■ FFR ≤0.80*	M (4)	R (2)	M (5)	R (3)	M (6)	M (4)	A (8)	M (6)
Proximal LAD or Proximal Left Dominant LCX Involvement Present									
4.	■ Low-risk findings on noninvasive testing	M (4)	R (3)	M (4)	M (4)	M (5)	M (5)	A (7)	A (7)
5.	■ Intermediate- or high-risk findings on noninvasive testing	M (5)	M (5)	M (6)	M (6)	A (7)	A (7)	A (8)	A (8)
6.	■ No stress test performed or, if performed, results are indeterminate ■ FFR ≤0.80	M (5)	M (5)	M (6)	M (6)	M (6)	M (6)	A (8)	A (7)

Seguimento Estendido do ROOBY Trial: Cirurgia Sem CEC Apresenta Piores Desfechos do que a Cirurgia de Revascularização Convencional

Five-Year Outcomes after On-Pump and Off-Pump Coronary-Artery Bypass

BACKGROUND

Coronary-artery bypass grafting (CABG) surgery may be performed either with cardiopulmonary bypass (on pump) or without cardiopulmonary bypass (off pump). We report the 5-year clinical outcomes in patients who had been included in the Veterans Affairs trial of on-pump versus off-pump CABG.

METHODS

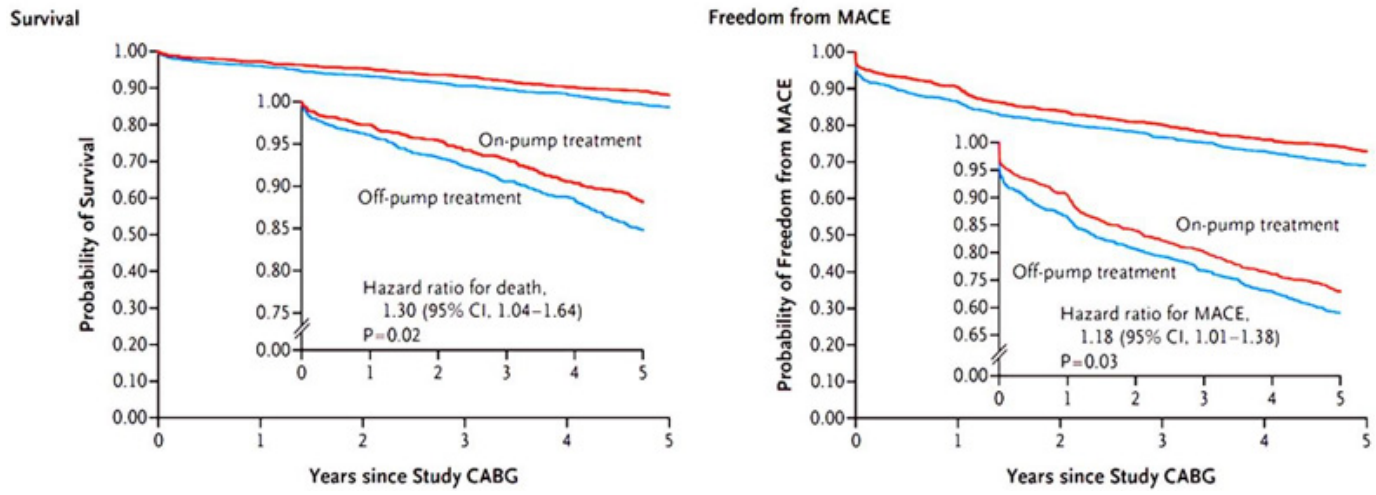
From February 2002 through June 2007, we randomly assigned 2203 patients at 18 medical centers to undergo either on-pump or off-pump CABG, with 1-year assessments completed by May 2008. The two primary 5-year outcomes were death from any cause and a composite outcome of major adverse cardiovascular events, defined as death from any cause, repeat revascularization (CABG or percutaneous coronary intervention), or nonfatal myocardial infarction. Secondary 5-year outcomes included death from cardiac causes, repeat revascularization, and nonfatal myocardial infarction. Primary outcomes were assessed at a P value of 0.05 or less, and secondary outcomes at a P value of 0.01 or less.

RESULTS

The rate of death at 5 years was 15.2% in the off-pump group versus 11.9% in the on-pump group (relative risk, 1.28; 95% confidence interval [CI], 1.03 to 1.58; P=0.02). The rate of major adverse cardiovascular events at 5 years was 31.0% in the off-pump group versus 27.1% in the on-pump group (relative risk, 1.14; 95% CI, 1.00 to 1.30; P=0.046). For the 5-year secondary outcomes, no significant diferences were observed: for nonfatal myocardial infarction, the rate was 12.1% in the off-pump group and 9.6% in the on-pump group (P=0.05); for death from cardiac causes, the rate was 6.3% and 5.3%, respectively (P=0.29); for repeat revascularization, the rate was 13.1% and 11.9%, respectively (P=0.39); and for repeat CABG, the rate was 1.4% and 0.5%, respectively (P =0.02).

CONCLUSIONS

In this randomized trial, off-pump CABG led to lower rates of 5-year survival and event-free survival than on-pump CABG. (Funded by the Department of Veterans Affairs Office of Research and Development Cooperative Studies Program and others; ROOBY-FS ClinicalTrials.gov number, NCT01924442.)



Em Pacientes com Diabete Tipo 1 e Doença Coronária Multiarterial, a Cirurgia de Revascularização Novamente se afirma como Método de Escolha para Intervenção

PCI versus CABG in Patients with Type 1 Diabetes and Multivessel Disease

BACKGROUND

It is unknown if coronary artery bypass grafting (CABG) or percutaneous coronary intervention (PCI) may offer a survival benefit in patients with type 1 diabetes (T1D) in need of multivessel revascularization.

OBJECTIVES

This study sought to determine if patients with T1D and multivessel disease may benefit from CABG compared with PCI.

METHODS

In an observational cohort study, the authors included all patients with T1D who underwent a first multivessel revascularization in Sweden from 1995 to 2013. The authors used the SWEDEHEART (Swedish Web-system for Enhancement and Development of Evidence-based care in Heart disease Evaluated According to Recommended Therapies) register, the Swedish National Diabetes Register, and the Swedish National Patient Register to retrieve information about patient characteristics and outcomes. They estimated hazard ratios (HRs) adjusted for confounders with 95% confidence intervals (CIs) for all-cause and coronary heart disease mortality, myocardial infarction, repeat revascularization, stroke, and heart failure using inverse probability of treatment weighting based on propensity scores.

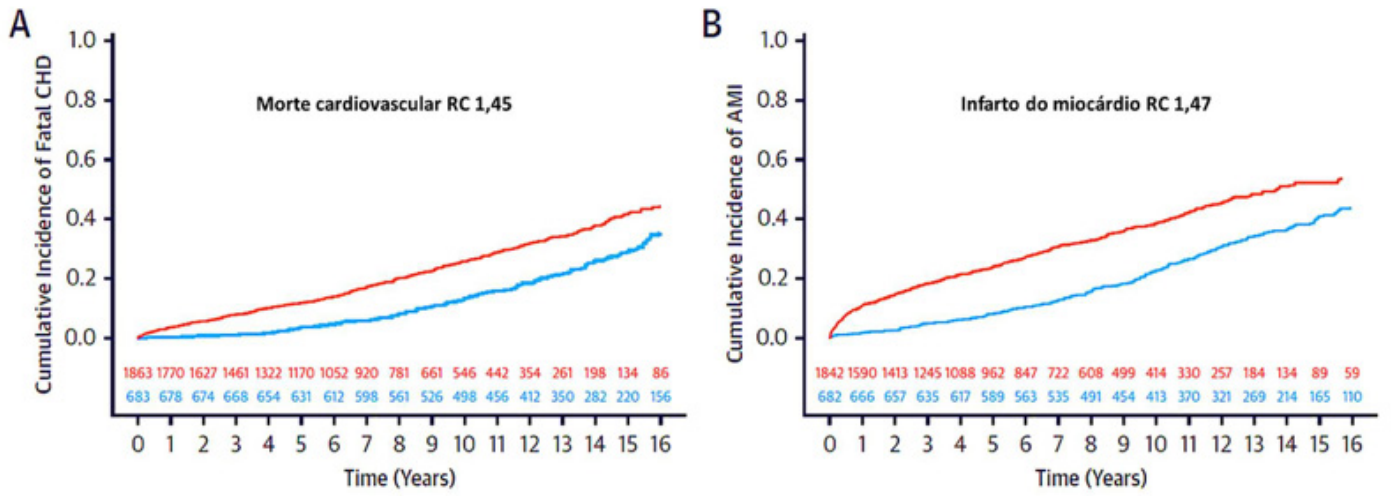
RESULTS

In total, 683 patients who underwent CABG and 1,863 patients who underwent PCI were included. During a mean follow-up of 10.6 years, 53% of patients in the CABG group and 45% in the PCI group died. PCI, compared with CABG, was associated with a similar risk of all-cause mortality (HR: 1.14; 95% CI: 0.99 to 1.32), but higher risks of death from coronary heart disease (HR: 1.45; 95% CI: 1.21 to 1.74), myocardial infarction (HR: 1.47; 95% CI: 1.23 to 1.78), and repeat revascularization (HR: 5.64; 95% CI: 4.67 to 6.82). No differences in risks of stroke or heart failure were found.

CONCLUSIONS

Notwithstanding the inclusion of patients with T1D who might not have been able to undergo CABG in the PCI group we found that PCI, compared with CABG, was associated with higher rates and risks of coronary heart disease mortality, myocardial infarction, and repeat revascularizations. Our findings indicate that CABG may be the preferred strategy in patients with T1D in need of multivessel revascularization.

Figure 2 – Outcomes in Relation to Revascularization Strategy.



Como a fração do fluxo de reserva (FFR) pode Contribuir na Avaliação de Pacientes antes e após a Cirurgia de Revascularização Miocárdica?

Fractional Flow Reserve to Guide and to Assess Coronary Artery Bypass Grafting

The aim of this review is to highlight the role of invasive functional evaluation in patients in whom coronary artery bypass graft (CABG) is indicated, and to examine the clinical evidence available in favour of fractional flow reserve (FFR) adoption in these patients, outline appropriate use, as well as point out potential pitfalls.

FFR after CABG will also be reviewed, highlighting its correct interpretation and adoption when applied to both native coronary arteries and bypass grafts. Practice European guidelines support the use of FFR to complement coronary angiography with the highest degree of recommendation (Class IA) for the assessment of coronary stenosis before undertaking myocardial revascularization when previous non-invasive functional evaluation is unavailable or not conclusive.

As a result, FFR has been adopted in routine clinical practice to guide clinicians decision as to whether or not perform a revascularization. Of note, due to the increasing confidence of the interventional cardiologists, FFR guidance is also being implemented to indicate or guide CABG.

This is in anticipation of supportive clear-cut evidence, since recommendations for FFR adoption were based on randomized clinical trials investigating percutaneous coronary intervention (PCI) strategies in which patients with typical indications for CABG were excluded (e.g. left main disease, valvular disease, and coronary anatomy unsuitable for PCI).

Based on the critical appraisal of the literature, FFR can play an important role in risk stratification and determining management strategy of patients either before or after CABG.

Table 2. Ongoing randomized clinical trials investigating the impact of FFR on surgical revascularization.

Trial	Design	Primary endpoint	Secondary endpoints
FFR vs. Angiography Randomization for Graft Optimization Trial (FARGO)	Prospective, randomized (1:1), double-blind, multi-centre study	Patent grafts (%) of all grafts at 6 months	• Graft stenosis at 6 months • Change in CCS class at 6 months
Graft Patency After FFR-guided vs. Angio-guided CABG Trial (GRAFFITI)	Prospective, multicentre, multinational, double-blind, randomized (1:1) study	Rate of occluded bypass grafts at 1 year	• Procedure time • Length of hospital stay; • Changes in surgical strategy • MACCE • Bleedings
FFR vs. Angiography for Multivessel Evaluation (FAME) 3 Trial: A Comparison of FFR-Guided PCI and CABG Surgery in Patients With Multivessel CAD	Prospective, multicentre, randomized study	MACCE (death, MI, stroke, and any repeat revascularization) at 1 year	• MACCE (death, MI, stroke, and any repeat revascularization) rate at 2-, 3-, and 5-year follow-up • Death, MI, stroke, and repeat revascularization
Strategies for Revascularization in Patients Undergoing Heart Valve Surgery With Concomitant CAD: Anglography vs. FFR (SAVE-IT)	Multicentre, international, randomized, controlled, superiority trial	• MACCE at 12 months • Graft failure at 12 months	• MACCE at 1 and 6 months

IMPRESS Trial: Dispositivo De Assistência Ventricular Impella Não Reduz Mortalidade Do Choque Cardiogênico Pós-IAM, Em Comparação Ao Balão Intraórtico

Percutaneous Mechanical Circulatory Support versus Intra-Aortic Balloon Pump in Cardiogenic Shock after Acute Myocardial Infarction

BACKGROUND

Despite advances in treatment, mortality in acute myocardial infarction (AMI) complicated by cardiogenic shock (CS) remains high. Short-term mechanical circulatory support devices acutely improve hemodynamic conditions.

OBJECTIVES

The aim of this study was to determine whether a new percutaneous mechanical circulatory support (pMCS) device (Impella CP, Abiomed, Danvers, Massachusetts) decreases 30-day mortality when compared with an intra-aortic balloon pump (IABP) in patients with severe shock complicating AMI.

METHODS

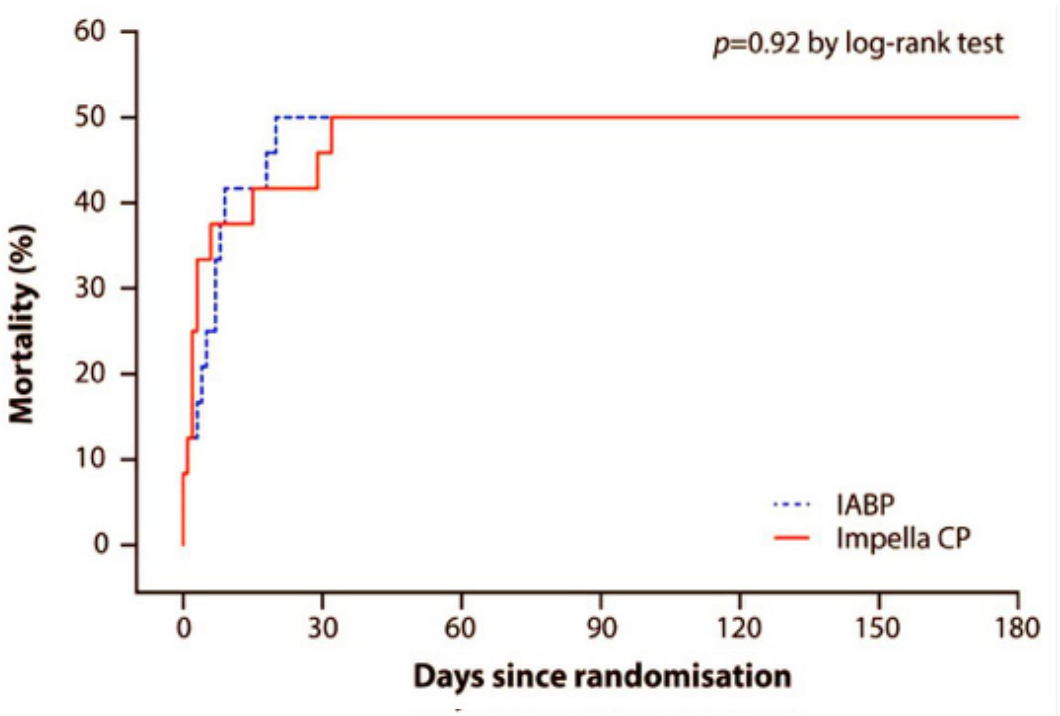
In a randomized, prospective, open-label, multicenter trial, 48 patients with severe CS complicating AMI were assigned to pMCS (n=24) or IABP (n=24). Severe CS was defined as systolic blood pressure <90 mm Hg or the need for inotropic or vasoactive medication and the requirement for mechanical ventilation. The primary endpoint was 30-day all-cause mortality.

RESULTS

At 30 days, mortality in patients treated with either IABP or pMCS was similar (50% and 46%, respectively; hazard ratio with pMCS: 0.96; 95% confidence interval: 0.42 to 2.18; p=0.92). At 6 months, mortality rates for both pMCS and IABP were 50% (hazard ratio: 1.04; 95% confidence interval: 0.47 to 2.32; p=0.923).

CONCLUSIONS

In this explorative randomized controlled trial involving mechanically ventilated patients with CS after AMI, routine treatment with pMCS was not associated with reduced 30-day mortality compared with IABP. (IMPRESS in Severe Shock; NTR3450).



Corevalve Demonstra Menor Mortalidade em 1 Ano, Comparada à Troca Aórtica Convencional: causas de Morte no US PIVOTAL Trial

Causes of Death from the Randomized Corevalve US Pivotal High-Risk Trial

OBJECTIVE

Explore causes and timing of death from the CoreValve US Pivotal High-Risk Trial.

METHODS

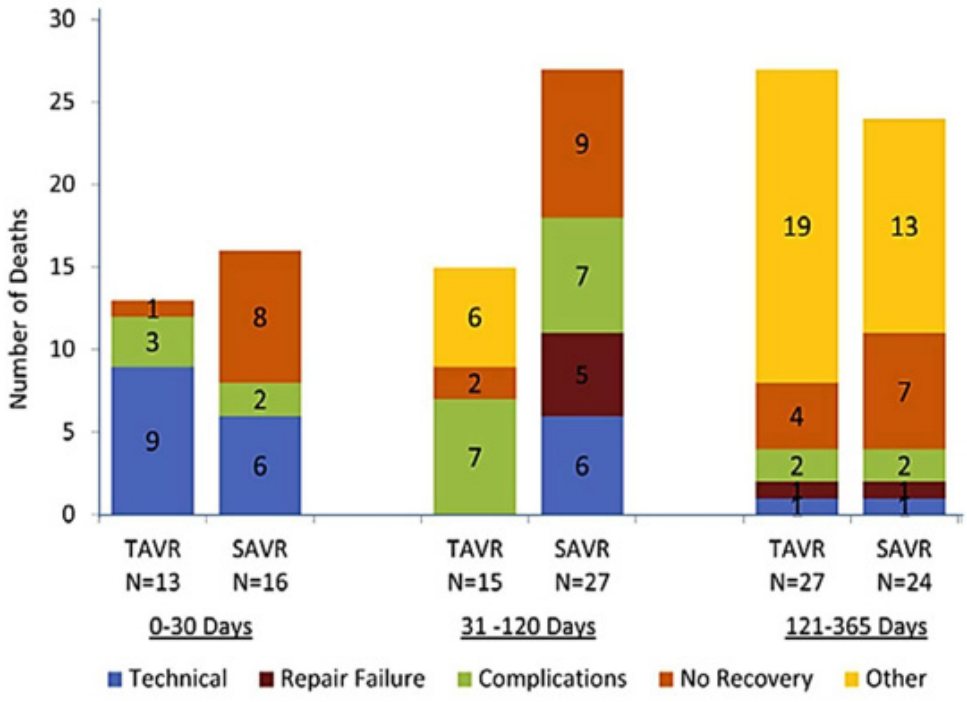
An independent clinical events committee adjudicated causes of death, followed by post hoc hierarchical classification. Baseline characteristics, early outcomes, and causes of death were evaluated for 3 time periods (selected based on threshold of surgical 30-day mortality and on the differences in the continuous hazard between the 2 groups): early (0-30 days), recovery (31-120 days), and late (121-365 days).

RESULTS

Differences in the rate of death were evident only during the recovery period (31-120 days), whereas 15 patients undergoing transcatheter aortic valve replacement (TAVR) (4.0%) and 27 surgical aortic valve replacement (SAVR) patients (7.9%) died (P = .025). This mortality difference was largely driven by higher rates of technical failure, surgical complications, and lack of recovery following surgery. From 0 to 30 days, the causes of death were more technical failures in the TAVR group and lack of recovery in the SAVR group. Mortality in the late period (121-365 days) in both arms was most commonly ascribed to other circumstances, comprising death from medical complications from comorbid disease.

CONCLUSIONS

Mortality at 1 year in the CoreValve US Pivotal High-Risk Trial favored TAVR over SAVR. The major contributor was that more SAVR patients died during the recovery period (31-121 days), likely affected by the overall influence of physical stress associated with surgery. Similar rates of technical failure and complications were observed between the 2 groups. This suggests that early TAVR results can improve with technical refinements and that high-risk surgical patients will benefit from reducing complications.



Sangramento Relacionado Ou Não ao Sítio de Acesso, é Preditor de Mortalidade em 5 Anos, após Implante Transcateter de Válvula Aórtica (TAVI)

Frequency, Timing, and Impact of Access-Site and Non–Access-Site Bleeding on Mortality among Patients Undergoing Transcatheter Aortic Valve Replacement

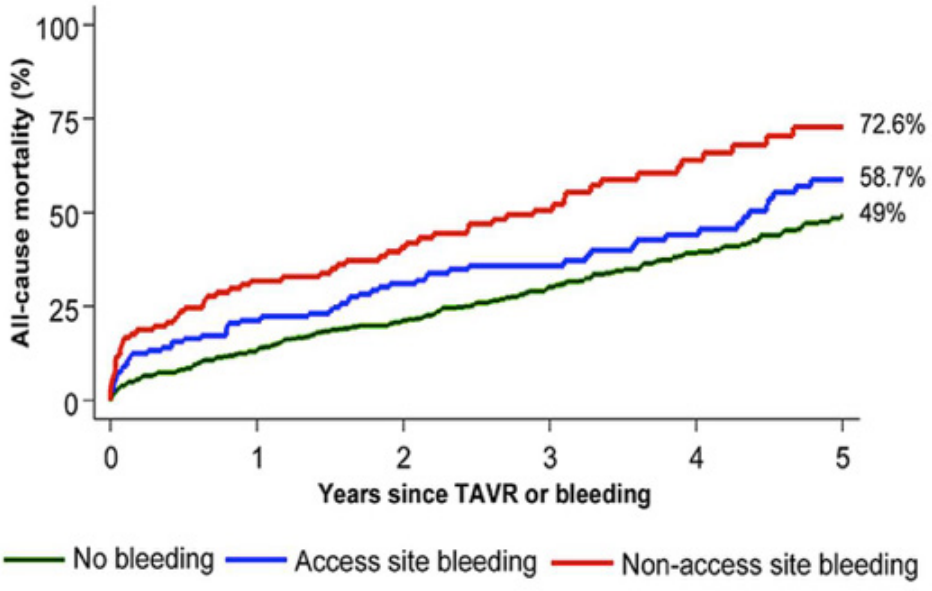
OBJECTIVES
The aim of this study was to examine the frequency, timing, and association of access-site and non–access-site bleeding with mortality in the setting of transcatheter aortic valve replacement (TAVR) during long-term follow-up.

BACKGROUND
Bleeding is frequent and associated with impaired prognosis in patients undergoing TAVR. It is currently unknown whether the site of bleeding differentially influences the outcomes of TAVR patients.

METHODS
In total, 926 consecutive patients undergoing TAVR from 2007 through 2014 were evaluated. Bleeding was assessed according to the Valve Academic Research Consortium 2 criteria. The primary outcome of interest was all-cause mortality up to 5 years of follow-up.

RESULTS
A total of 285 patients (30.7%) experienced at least 1 (minor, major, or life-threatening) bleeding event up to 5 years. Compared with patients not experiencing bleeding, the adjusted risk for all-cause mortality was significantly increased among patients with access-site (hazard ratio: 1.34; 95% confidence interval: 1.01 to 1.76; p ¼ 0.04) and non–access-site bleeding (hazard ratio: 2.08; 95% confidence interval: 1.60 to 2.71; p<0.001). However, non–accesssite bleeding conferred a significantly higher risk for mortality compared with access-site bleeding (hazard ratio: 1.56; 95% confidence interval: 1.12 to 2.18; p ¼ 0.009). At multivariate analysis, female sex was a significant correlate of access-site bleeding, whereas chronic kidney disease and the Society of Thoracic Surgeons score were significantly associated with non–access-site bleeding.

CONCLUSIONS
Among patients with severe aortic stenosis undergoing TAVR, access-site and non–access-site bleeding were independently associated with an increased risk for mortality, with the greatest risk related to non–access-site bleeding during long-term follow-up. (J Am Coll Cardiol Intv 2017;10:1436–46).



Estudo Randomizado Norueguês revela que Stents Farmacológicos não melhoram Sobrevida ou Taxa de Infarto, em Relação aos Stents Convencionais

Drug-Eluting or Bare-Metal Stents for Coronary Artery Disease. The NORSTENT Study

BACKGROUND

Limited data are available on the long-term effects of contemporary drug-eluting stents versus contemporary bare-metal stents on rates of death, myocardial infarction, repeat revascularization, and stent thrombosis and on quality of life.

METHODS

We randomly assigned 9013 patients who had stable or unstable coronary artery disease to undergo percutaneous coronary intervention (PCI) with the implantation of either contemporary drug-eluting stents or bare-metal stents. In the group receiving drug-eluting stents, 96% of the patients received either everolimus- or zotarolimus-eluting stents. The primary outcome was a composite of death from any cause and nonfatal spontaneous myocardial infarction after a median of 5 years of follow-up. Secondary outcomes included repeat revascularization, stent thrombosis, and quality of life.

RESULTS

At 6 years, the rates of the primary outcome were 16.6% in the group receiving drug-eluting stents and 17.1% in the group receiving bare-metal stents (hazard ratio, 0.98; 95% confidence interval [CI], 0.88 to 1.09; P=0.66). There were no significant between-group differences in the components of the primary outcome. The 6-year rates of any repeat revascularization were 16.5% in the group receiving drug-eluting stents and 19.8% in the group receiving bare-metal stents (hazard ratio, 0.76; 95% CI, 0.69 to 0.85; P<0.001); the rates of definite stent thrombosis were 0.8% and 1.2%, respectively (P=0.0498). Quality-of-life measures did not differ significantly between the two groups.

CONCLUSIONS

In patients undergoing PCI, there were no significant differences between those receiving drug-eluting stents and those receiving bare-metal stents in the composite outcome of death from any cause and nonfatal spontaneous myocardial infarction. Rates of repeat revascularization were lower in the group receiving drug eluting stents. (Funded by the Norwegian Research Council and others; NORSTENT ClinicalTrials.gov number, NCT00811772.)