

Letters

TO THE EDITOR

The Wisdom of Restraint



I was pleased to see the thoughtful editorial by Dr. Chris White (1) in a recent issue of *JACC: Cardiovascular Interventions*. I remember the case Dr. White describes very well, and it reminded me of the many lessons we have learned about product development over the past 40 years. I also learned from Drs. Simpson and Gruntzig the importance of honesty and integrity in always placing the patient first.

It is not easy when there is an obvious conflict when you as the operator own the technology and have a financial interest in the outcome. That day was the very first Transcatheter Cardiovascular Therapeutics meeting at which I did a live case demonstration, and the case Drs. Leon and Kent picked was a circumflex lesion, easy by today's standards, but back then I knew it would be a challenge from the start. We considered not even trying, but I thought it might be good for the audience to see me struggle and that this was not an easy procedure, given the limitations of our rigid delivery system. If I failed, perhaps I would have saved future patients from overaggressive operators pushing the technology too far. It was an easy decision to quit when the conditions were not just right.

A few years later, a similar interaction took place in Toulouse, France, where a live case I did with one of the premier operators of all time, Dr. Jean Marco, also did not go nearly so well. Dr. Marco apologized profusely, but I responded that the purpose of live case demonstrations is to teach the good along with the bad. The audience doesn't learn nearly as much when things go well as they do when they go badly. I didn't want our colleagues thinking that this was an easy procedure. Live case demonstrations require special discipline to make sure the patient is not harmed, no matter how much pressure there might be to succeed.

So Dr. White is correct in his conclusions about teaching our young fellows these valuable lessons. He has been a driving force in our family of interventional cardiology for many years, and we are all lucky

to have him as one of our mentors for young trainees. I will leave him with one of my favorite quotations, which I continue to preach to our fellows: "Of all the manifestations of power, the one that men respect most is restraint."

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TO THE EDITOR

Does the OPTALYSE PE Trial Cover Unmet Need in the Real-Life Practice of Pulmonary Embolism?



We read with great interest the report by Tapson et al. (1). In their study, the low enrollment rate suggests selection bias that might have been due to the long list of exclusion criteria, which did not allow the study design to cover unmet need in pulmonary embolism management. Moreover, one-fifth of patients were at intermediate to low risk, a population in which the superiority of ultrasound-facilitated catheter-directed thrombolysis (USCDT) over anticoagulant agents has never been proved (1). It remains uncertain why the ratio of right ventricular to left ventricular diameter (RV/LVr) improved uniformly across all arms, while clot burden improved as dose increased and infusion was prolonged. Although the investigators hypothesize that lower doses and shorter infusions of lytic agents can improve functional vessel radius enough to improve pulmonary perfusion and RV/LVr, the critical threshold of absolute or change

in refined modified Miller score remains to be determined. Methodologically, the final value achieved might be more appropriate than percentage reduction for assessment of benefit. In our meta-analysis of USCDT, the standardized paired differences for improvements in RV/LVr and obstruction scores were 45% and 42%, respectively (2). Moreover, our 5-year experience with USCDT revealed that RV/LVr change was comparable with that in the present trial, while the Qanadli score improved by 62% (3). We also documented that percentage change in Qanadli score showed a mild correlation to percentage improvement in RV/LVr, and only changes in QS, not those in RV/LVr, showed significant interactions with lytic dose (3). The absence of comparisons in relation to age, baseline risk, and therapeutic strategy should also be considered important limitations. Low morbidity and mortality rates might represent a low-risk population, but not real-life outcomes in overall patients at intermediate to high risk. Moreover, in the era of effective anticoagulant regimens, low pulmonary embolism recurrence rates could not be attributed solely to the impact of USCDT.

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RESEARCH CORRESPONDENCE

Clinical Implications of Distal Vessel Stenosis After Successful Coronary Chronic Total Occlusion Recanalization



Chronic total occlusions (CTOs) represent the ultimate stage of coronary atherosclerosis, with commonly associated high plaque burden upstream and downstream of the occlusion itself. Physiological modifications in the vessel distal to the CTO lesion lead to negative vascular remodeling and plaque growth in this segment (1), which undergoes variable degrees of diameter improvement after successful recanalization (2). We report here the angiographic evolution and clinical impact of stenoses located in the segments distal to CTO lesions in a large cohort of patients, derived from 2 randomized clinical trials with mandatory angiographic follow-up at mid-term follow-up.

The present analysis is based on the PRISON (Primary Stenting of Occluded Native Coronary Arteries) III and IV trials (3,4). Briefly, after successful recanalization of coronary occlusions, patients were randomized to different second-generation drug-eluting stents. In both studies, angiographic and clinical follow-up was scheduled at 8 to 9 and 12 months, respectively. Of note, only CTO lesions (>3 months old) were herein analyzed.

Quantitative coronary analysis (QCA) was independently assessed offline according to standard indications (3,4). The target of QCA assessment was the distal segment, defined as that immediately downstream of the stented segment of the occlusion until the final bifurcation of the major epicardial vessel, and was analyzed at the end of the index procedure and on follow-up angiography, after intracoronary nitroglycerin was administered per protocol. Patients were divided into 3 groups: group A consisted of patients with presence of binary stenosis ($\geq 50\%$) in the distal segment immediately after CTO recanalization who did not receive additional intervention during the index procedure, group B included patients with absence of binary stenosis in the distal segment, and group C included patients with binary stenoses in the distal segment, which underwent stenting during the index procedure, as by operator choice. In group C, QCA was performed before stenting. Angiographic