Harnessing drug-coated balloons for management of left main coronary disease: A promising strategy?

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In clinical practice, management of unprotected left main stem (LMS) stenoses with percutaneous coronary intervention (PCI) has been quite challenging, particularly in the presence of bifurcation or aorto-ostial stenoses [1–3]. In this context, certain stent-based PCI techniques have been described as having variable safety and efficacy [1]. In their recently published article, Kovacevic M, et al. [1] have reviewed a variety of issues associated with unprotected LMS stenting. We fully agree with the suggested challenges and their management strategies [1]. However, we also would like to underscore the potential clinical value of drug-coated balloons (DCBs) in management of LMS disease.

It is well known that drug-eluting stents (DESs) have been increasingly used in the setting of LMS stenoses [1] despite a high mortality risk in the case of stent-related complications including stent thrombosis, etc. In particular, these stent-related complications appear to be substantially higher in aorto-ostial and bifurcation points largely due to a variety of adverse rheological, anatomical, and histopathological factors that might potentially be associated with geographic miss along with stent mal-apposition and/or delayed endothelization [3,4]. Moreover, “carina shift” might arise as a significant procedural complication frequently encountered in management of bifurcation stenoses (including distal LMS), particularly with the use of certain techniques including cross-over stenting and ostial stenting [1–3].

Consequently, the use of alternative tools and techniques potentially with better safety outcomes might arise as a viable option in management of LMS stenoses, particularly involving aorto-ostial or distal bifurcation points [2,3]. In this context, harnessing DCBs has been suggested as a safe and effective option for management of de-novo atherosclerosis involving small and large coronary arteries, even in the setting of stenoses with precarious anatomical features (including stenoses at bifurcation points) [2]. In a recent study, management with DCBs alone (with the guidance of optic coherence tomography [OCT]) was demonstrated to work well in most patients with stenosis involving the distal LMS (Medina types 0,1,0 or 0,0,1) [2]. Importantly, none of the patients in the study population had any adverse clinical events at 7.7 ± 6.0 months following PCI with DCBs [2]. However, the clinical value of DCBs remains to be established in more complex types of LMS disease (including Medina 1,1,1, etc.) [3]. Accordingly, we wonder about the opinion and experience of the authors [1] regarding management of unprotected LMS stenoses with DCBs alone (with provisional DES implantation where necessary) [1].

In conclusion, the use of DCBs might obviate stent-related complications (including carina shift, late thrombosis, etc.), and might serve as a reasonable option for management of unprotected LMS stenoses [2,3]. However, further studies are still needed before labeling them as alternatives to DES, particularly in the setting of LMS stenoses with high-risk anatomical features.
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