Response by Kawakami et al to Letter Regarding Article, "Novel Angiographic Classification of Each Vascular Lesion in Chronic Thromboembolic Pulmonary Hypertension Based on Selective Angiogram and Results of Balloon Pulmonary Angioplasty"

In Response:

We thank Dr Roik et al for their interest in our study regarding novel angiographic classification of chronic thromboembolic pulmonary hypertension lesions.[1] They raise the issue about the usage of pressure wire, intravascular ultrasound, and optical coherence tomography in performing balloon pulmonary angioplasty (BPA). These modalities were not addressed in our article because we cannot evaluate all lesions with them. Among 1936 lesions evaluated in our study, 110 lesions could not be crossed with guidewire. None of the abovementioned modalities can evaluate these lesions because they can be used only after successful crossing of the guidewire. Because the aim of our article is to evaluate the success and complication rate of BPA according to the location and morphology of thromboembolic lesions to classify the lesions, we needed to use a modality that can evaluate all targeted lesions. Thus, we chose a selective angiography which we can perform in all the lesions regardless of the ability to cross the lesions with guidewire.

In our article, we reviewed initial 500 procedures of >2000 procedures performed until now, for inexperienced operators to get a fundamental understanding of the risk of performing BPA. Most complications (76 of 107) in our reviewed procedures were lesion distal vascular injury caused by the tip of the guidewire. This indicates that careful manipulation of the guidewire and avoiding deep insertion would be the most important to reduce complications. To learn to do so might be a part of the learning curve at an early stage of BPA.[2] Performing BPA by using advanced imaging devices is impossible in patients with severe status, makes procedures more complex and expensive, and can lead to more complications. To establish BPA as a standard therapy, we need a technique that can be universally performed worldwide. In this regard, simple selective pulmonary angiography would be superior to other modalities.

We agree with Dr Roik et al that there is a need for a large prospective multicenter study of BPA in large cohort of chronic thromboembolic pulmonary hypertension patients. However, before considering such studies, we need to standardize the treatment goal of BPA for chronic thromboembolic pulmonary hypertension patients. BPA requires many expensive devices and repeated admission. Therefore, at least normalization of hemodynamics of chronic thromboembolic pulmonary hypertension patients should be aimed in performing BPA with minimal complication rate. Otherwise, there is no advantage of BPA over medical treatment, which reduces mean pulmonary artery pressure by 4 mm Hg.[3] Our treatment goal of BPA during initial 500 procedures was to achieve the mean pulmonary artery pressure <30 mm Hg to improve long-term survival of patients.[4] After treating >100 patients with BPA, our goal has advanced to achieve mean pulmonary artery pressure <25 mm Hg and oxygen saturation >95% without using any vasodilators or oxygen. We hope to collaborate with BPA centers, which share the treatment goal with us.

Disclosures

Dr Ogawa received lecture fees from Bayer Yakuhin, Ltd, Pfizer Japan Inc, Nippon Shinyaku Co, Ltd, Actelion Pharmaceuticals Japan Ltd, and GlaxoSmithKline K.K. Dr Miyaji received lecturer fees from Pfizer Japan Inc, Actelion Pharmaceuticals Japan Ltd, and GlaxoSmithKline K.K. Dr Matsubara received lecture fees from Bayer Yakuhin, Ltd, Pfizer Japan Inc, Nippon Shinyaku Co, Ltd, Actelion Pharmaceuticals Japan Ltd, GlaxoSmithKline K.K., and Kaneka Medix Corporation. The other authors report no conflicts.

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