

Multimodality imaging results of neointimal healing after magnesium scaffold implantation in an acute coronary syndrome setting

Magdalena Łanocha¹, Adrian Włodarczak², Marek Szudrowicz², Artur Jastrzębski², Maciej Pęcherzewski², Maciej Lesiak³

¹St. Adalbert's Hospital, Poznań, Poland

²Department of Cardiology, MCZ Hospital, Lubin, Poland

³Department of Cardiology, Poznan University of Medical Sciences, Poznań, Poland

Correspondence to:

Magdalena Łanocha, MD, PhD, St. Adalbert's Hospital, Bolesława Krzywoustego 114, 61-144 Poznań, Poland, phone: +48 616 233 111, e-mail: drlanocha@gmail.com

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Treatment with bioresorbable magnesium scaffolds (Magmaris, Biotronik AG, Bülach, Switzerland) is recommended only for stable angina pectoris [1]. Confirmation of promising results using Magmaris in acute coronary syndrome (ACS) can be found in recently published registries [2].

A 57-year-old woman with typical risk factors (hypertension, hyperlipidemia) was admitted to the CathLab because of non-ST-segment elevation ACS. Coronary angiography showed a severe lesion at the proximal part of the left anterior descending artery (Figure 1A). The lesion characteristics (focal, concentric, smooth

contour without calcification and thrombus) were encouraging for bioresorbable magnesium scaffolding. The lesion was predilated with a 3.5 mm at 16 atm non-compliant balloon, followed by implantation of a 3.5 × 20.0 mm bioresorbable magnesium scaffold at 16 atm; post-dilation was performed with a 3.5 mm at 16 atm non-compliant balloon. Optimal results (device expansion, struts apposition, no edge dissection) were confirmed on the final angiography (Figure 1B) and optical coherence tomography (OCT) assessment (Figure 1D). Three days later, the patient was discharged on aspirin and ticagrelor.

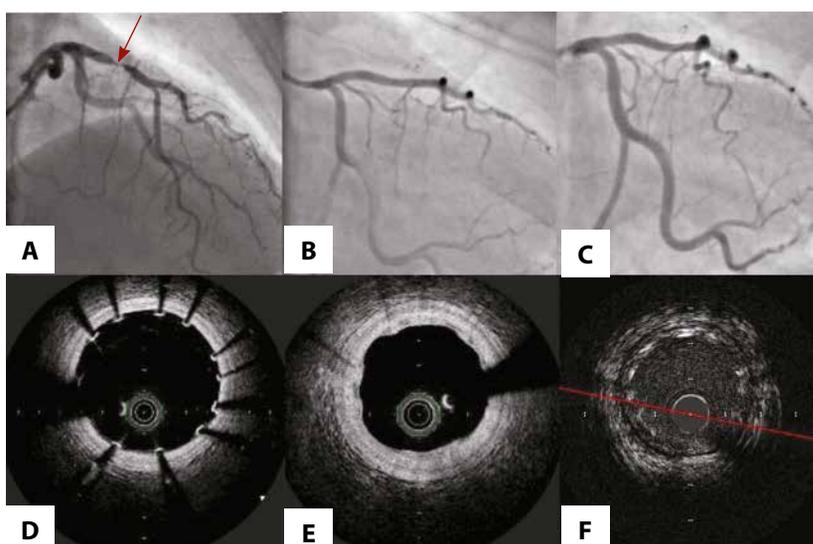


Figure 1. A. Coronary angiography: baseline lesion at the proximal part of the left anterior descending artery (arrow). B. Optimal results after Magmaris implantation. C. Control 12-month follow-up. D. Optical coherence tomography assessment: baseline after Magmaris implantation E. and control 12-month follow-up. F. Control 12-month follow-up intravascular ultrasound

Control coronary angiography performed 12 months later showed perfect angiographic results (Figure 1C). Neointimal healing was evaluated by OCT and intravascular ultrasound, confirming almost completed the scaffold bioresorption process. The magnesium scaffold or its footprint was no longer discernible by OCT (Figure 1E). Only intravascular ultrasound IVUS images contain the visible healing bright spots (amorphous calcium phosphate) within the neointima (Figure 1F).

At that time, DAPT was discontinued. Four-year clinical follow-up confirmed a further uneventful course of coronary artery disease.

Multimodality intracoronary imaging confirmed the 95% magnesium alloy resorption at 12 months. Presented magnesium scaffold images confirmed superiority over the polymeric scaffold regarding neointimal healing during the first year after scaffold implantation.

The second generation of bioresorbable scaffolds with their unique properties that 'do their job and disappear' may also be a promising therapeutic option for ACS patients.

Article information

Conflict of interest: MŁ and ML have received speaking fees from Biotronik AG. The other authors have no conflicts of interest to declare.

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