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Editorial



# Can Genoss DES™ Stand Out in the Crowd of Stents?

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▸ See the article "Safety and Efficacy of a New Ultrathin Sirolimus-Eluting Stent with Abluminal Biodegradable Polymer in Real-World Practice" in volume 50 on page 317.



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After the introduction of coronary stenting, reducing restenosis and stent thrombosis are the main issue in the interventional cardiology field. The drug-eluting stent (DES) inhibiting endothelial growth has been one option to reduce restenosis. However, potent inhibition of endothelial growth along with hypersensitivity reaction to polymer increased the incidence of stent thrombosis, and the first-generation of DES had been withdrawn due to increased incidence of late or very late stent thrombosis.[1] There are newer-generation DESs with a biocompatible polymer containing new drugs to reduce these complications. Recently, we have several newer-generation DESs in the clinical fields with improved safety and efficacy than the first-generation DES.[2]

Genoss DES™ (Genoss Company Limited, Suwon, Korea) is one of newer-generation stents with a cobalt-chromium platform with an abluminal biodegradable polymer containing sirolimus.[3] The Genoss DES™ is the first Korean sirolimus-eluting stent on the market and it has ultrathin strut with 70 μm strut thickness with 3 μm thin abluminal polymer coating containing Sirolimus. **Table 1** listed the comparison of the Genoss DES™ with other second-generation DES. The polymer is designed to release approximately 70% of the total drug amount within 30 days of the implantation and is entirely absorbable within 9 months. Thus, only the metal component of the stent will remain. In the first-in-man trial comparing Genoss DES™ and Promus Element™ stent (Boston Scientific Co., Natick, MA, USA), there was a similar result in angiographic and clinical outcomes at a 9-month follow-up.[3] However, the study was too small to conclude that the Genoss DES™ is safe and efficient for de novo coronary stenosis. Thus, we needed a study with a large number of population to prove its safety and efficacy.

In this current study, Youn et al.[4] published clinical performance with the Genoss DES™. They included 622 consecutive patients in the prospective, single-arm, observational, and multi-center registry and found the incidence of a device-oriented composite outcome (DOCO), defined as cardiac death, target vessel-related myocardial infarction and target lesion revascularization occurred only in 4 patients (0.6%) at 12 months. Among 4 patients with DOCO, there were 1 cardiovascular death, 1 target vessel myocardial infarction and 3 target lesion revascularization. Although this study was an interim analysis of the prospective ongoing registry which planned to include 2,000 subjects originally, it can give us valuable information about the safety and efficacy of the Genoss DES™.

**Table 1.** Comparative characteristics of contemporary coronary drug-eluting stents

| | Biodegradable polymer | | | | Durable polymer | |
|---|---|---|---|---|---|---|
| Brand name | Genoss | Synergy | Orsiro | Biomatrix Flex | Xience Sierra | Resolute Onyx |
| Company | Genoss | Boston Scientific | Biotronik | Biosensors | Abbott | Medtronic |
| Country | Korea | USA | Germany | Singapore | USA | USA |
| Drug | Sirolimus | Everolimus | Sirolimus | Biolimus | Evelorimus | Zotarolimus |
| Stent | | | | | | |
| Material | CoCr | PtCr | CoCr | 316L stainless steel | L-605 CoCr | CoNi with Pt-Ir |
| Thickness | 70–78 | 79–81 | 60–80 | 112 | 81 | 81–91 |
| Polymer | | | | | | |
| Material | PLLA/PGLA | PGLA | PLLA | PDLLA | PVDF-HFP | BioLinx |
| Coating distribution | Abluminal | Abluminal | Conformal | Abluminal | Conformal | Conformal |
| Coating thickness (μm) | 3 | 4 | 7.4 | 16.6 | 8 | 4.8 |
| Drug elution time | 3–4 months | 3 months | 100–120 days | 180 days | 120 days | 180 days |
| Polymer absorption time | 6–9 months | 3–4 months | 15 months | 6–9 months | Permanent | Permanent |
| Strut cross section |  | | | | | |

CoCr = cobalt-chromium; PtCr = platinum-chromium; CoNi = cobalt-nickel; Pt-Ir = platinum-iridium; PLLA = poly-L-lactic acid; PLGA = poly-lactic co-glycolic acid; PDLLA = poly-D,L-lactic acid; PVDF-HFP = co-polymer of vinylidene fluoride and hexafluoropropylene.

The contents of the report are the author's own views and do not necessarily reflect the views of the *Korean Circulation Journal*.

However, there are still a lot of hurdles for the Genoss DES™ to stand out in the crowd of numerous stents. As mentioned in the limitation section of the study, the authors should include more patients in this prospective registry and report the clinical outcome. Moreover, we need clinical studies including a large number of patients comparing the Genoss DES™ with other DESs in a prospective and randomized manner. These studies should include patients with diverse clinical settings including acute myocardial infarction or complex coronary lesions and should have longer term follow-up to evaluate the incidence of very late stent thrombosis or late restenosis. It should also be able to overcome very severe calcified and angulated lesions without migration or damage and to expand well with a sufficient radial strength. To stand out in the ordinary stones, the developers should try to improve the product and to get better clinical results with sufficient support.

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