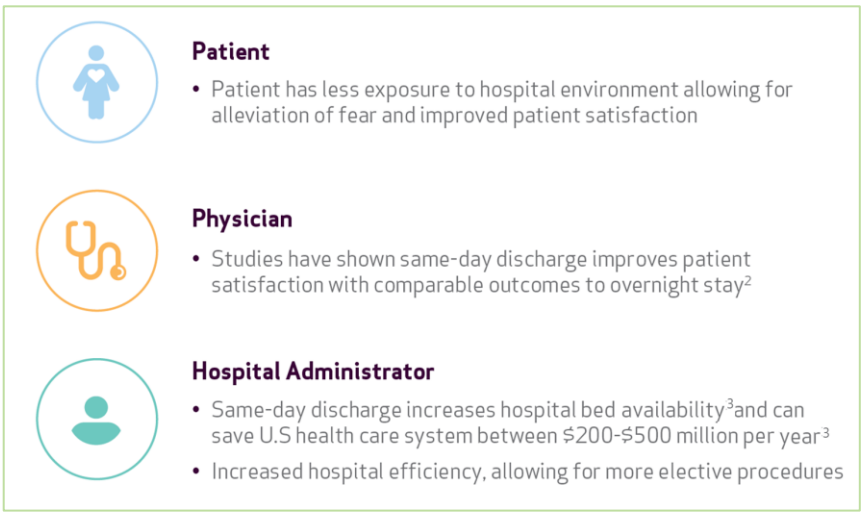
TRI 30th Anniversary Newsletter Vol. 2

The future brought by radial approach — Same-Day Discharge

What is SDD?

Do you know the abbreviation "SDD"? This stands for *Same-Day Discharge*, namely, it refers to same-day catheterization where the patient completes catheterization and then goes home without being hospitalized on the same-day. Use of a transradial approach to increase the rate of conduct of this same-day discharge is now being discussed as one of the latest topics. Looking back at the history of discussion, SDD has been reported since the early 2000s triggered by the emergence of vascular closure devices that greatly reduced the duration of hemostasis in the femoral approach.[1] In the late 2000s, same-day catheterization with the radial approach was reported, and the number of reports of SDD steeply increased along with the popularization of the radial approach in the late 2010s.[2] This was related to the radial approach's benefit of the greatly reduced incidence of post-procedural hemorrhagic complications to shorten the stay in hospital.

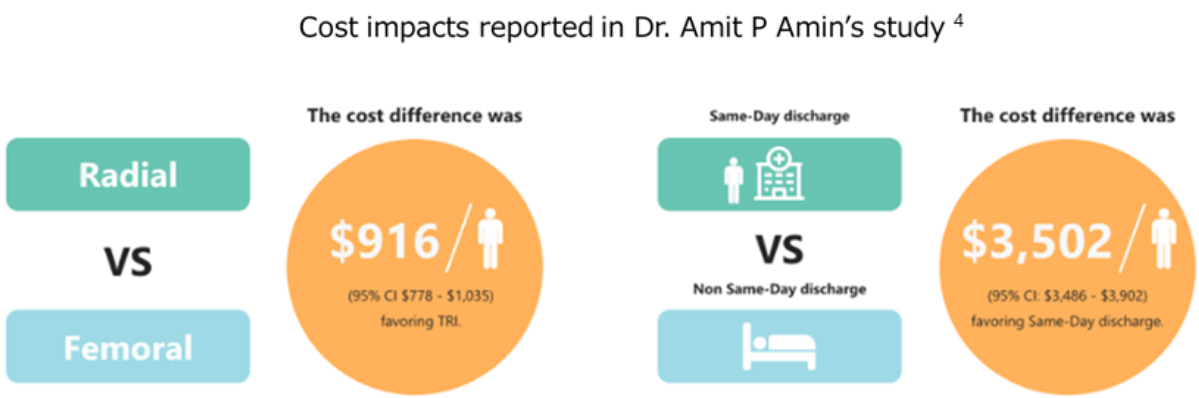


Why SDD?

The greatest benefits from same-day discharge after PCI are improved patient satisfaction, reduced hospitalization time, and efficient use of medical costs.[2] Particularly these days, an increasing number of patients wish to stay in hospital for a shorter period due to the

COVID-19 pandemic. In addition, it has been confirmed that SDD has no significant difference from inpatient care in the incidence of complications of bleeding, repeat coronary procedures, death, or rehospitalization, as well as procedure outcome.[2]

In addition, the background to the increasing attention to SDD includes cost benefits. Hospitals can efficiently obtain profits by increasing bed turnover, and medical costs are reduced by SDD in some regions. In the US, for example, Dr. Amit Amin et al. reported in 2017 that switching of the approach site from the femoral artery to the radial artery reduced medical costs by $916 per capita. Furthermore, the SDD group had the medical cost reduced by $3,502/person compared with the hospitalization group.[4]



How to start SDD?

So, what conditions are required to conduct SDD? According to the latest SCAI Guidelines[5], cases can be classified into cases suitable and cases unsuitable for SDD from the viewpoint of the 3Ps: Patient, Procedure, and Program (see the figure below). Based on this classification, many patients benefit from SDD. SDD can be conducted not only based on consent from individual patients and doctors but requires a great change involving all organizations related to patient's flow in the hospital. To embark on this journey, you should understand patient safety above all else.

Post-PCI Procedure Discharge criteria*

Favorable Same-Day Discharge

PATIENT

- ☐ Patient is clinically stable
- ☐ Patient is at baseline functional and mental status
- ☐ Baseline comorbidities such as diabetes, CHF, COPD, PAD and ESRD are stable

PROCEDURE

- ☐ Adequate hemostasis achieved
- ☐ Successful procedure[1]
- ☐ Effective dual-antiplatelet therapy administered (Pretreatment not required)

PROGRAM

- ☐ Meets PCI program operational requirements for postprocedure care
- ☐ Adequate caregiver support
- ☐ Patient and caregiver education
- ☐ Provision of P2Y12 inhibitor and medication instruction
- ☐ Contact information and follow-up appointment

Considerations for Overnight Observation

PATIENT

- ☐ Chronic kidney disease requiring prolonged hydration
- ☐ Decompensated CHF or fluid overload
- ☐ Decompensated COPD
- ☐ Continuing angina
- ☐ Contrast reaction with ongoing symptoms

PROCEDURE

- ☐ Angiographic complexities[1] (Prolonged no reflow, side branch closure, dissection, perforation), Inability to deliver stent/balloon angioplasty only, last remaining coronary artery PCI
- ☐ Bleeding complication
- ☐ Vascular complication;
- ☐ Large contrast volume
- ☐ Need for GP IIb/IIIa Infusion
- ☐ Periprocedural MI
- ☐ Left ventricular support device used
- ☐ Large-bore (≥9 French) or brachial access

PROGRAM

- ☐ Inadequate home support
- ☐ No transportation home
- ☐ Discomfort of patient, caregiver, or physician with same-day discharge
- ☐ Inadequate access to emergency medical care following PCI

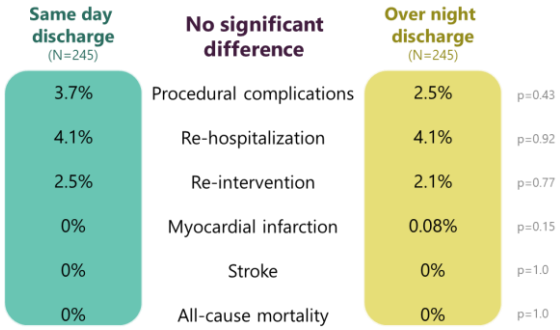
* This checklist provides recommendations that are supported by current guidelines.[1] These recommendations do not replace healthcare facility's protocols and are meant to be individualized to each facility program.

References

1. Seto, Arnold H., et al. "Length of Stay Following Percutaneous Coronary Intervention: An Expert Consensus Document Update from the Society for Cardiovascular Angiography and Interventions." *Catheterization and Cardiovascular Interventions*, vol. 92, no. 4, 2018, pp. 717–731.

A number of studies have already been performed on safety of SDD (see the figure below). We, Terumo, will continue to promote the recognition of these study results as listed below and support the popularization of the radial approach. The transradial approach, for which Terumo has made a great effort with you for many years, is

also a key to enable the practice of SDD. We would like to make every effort to support you in the future so that more patients and medical professionals can benefit from the transradial approach and SDD.

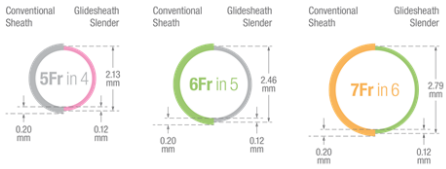
Literatures	Results
Same versus next day discharge after elective transradial PCI: The RAdial SAme Day DischArge after PCI trial. (The RASADDA-PCI trial) Rodriguez-Araujo G et al Cardiovasc Revasc Med. 2018 Sep;19(6S):7-11. (https://www.sciencedirect.com/science/article/pii/S1553838918302422?via%3Dihub)	
Same Day Discharge versus Overnight Stay in the Hospital following Percutaneous Coronary Intervention in Patients with Stable Coronary Artery Disease: A Systematic Review and Meta-Analysis of Randomized Controlled Trials. Bundhun PK, Soogund MZ, Huang WQ. PLoS One. 2017 12(1): e0169807. (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5222585/)	During this 30-day follow up mortality, the following items were not significantly different between same day discharge and overnight stay following PCI. Outcomes analyzed / OR with 95% CI / P value / I^2(%) **Any adverse event** 0.42 [0.05–3.97] 0.45 71 **Death** 0.22 [0.04–1.35] 0.10 0 **Major bleeding** 0.73 [0.15–3.54] 0.69 72 **MI** 0.68 [0.33–1.41] 0.30 25 **MACEs** 0.45 [0.20–1.02] 0.06 0 **Blood transfusion** 0.64 [0.13–3.21] 0.59 0 **Repeated revascularization** 0.67 [0.14–3.15] 0.61 54 **Re-hospitalization** 1.53 [0.88–2.65] 0.13 0 Abbreviations: MI: myocardial infarction, MACEs: major adverse cardiac events, OR: odds ratio, CI: confidence intervals

Related products

Glidesheath Slender™

Hydrophilic Coated Sheath

The proprietary thin-wall technology and Terumo Mcoat™ hydrophilic coating



RADIFOCUS™ Optitorque™

TIG shape / Jacky shape

- Designed for good torque control and high flow
- One catheter strategy (for radial approach) has benefit on procedure time and direct cost

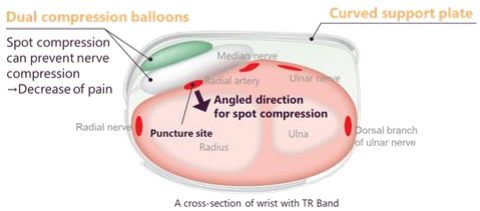
-40% **Procedure time** [6]
199.6±50.2 s vs 331.5 s, p=0.001

-13% **Direct cost per procedure** [7]
149 (140-160) vs 171 (160-183) p<0.001

TR Band™

Radial Artery Compression Device

Transparent structure designed for visual control and selective compression of the radial artery



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TERUMO INTERVENTIONAL SYSTEMS

Reference

1. Yee KM, Lazzam C, Richards J, et al. "Same-day discharge after coronary stenting: a feasibility study using a hemostatic femoral puncture closure device." J Interv Cardiol. 2004 Oct;17(5):315–20.
2. Shroff A, et al. "Same-Day Discharge After Percutaneous Coronary Intervention." JAMA Cardiol. 2016 May 1;1(2):216-23.
3. Groves, Elliott, and Mladen I Vidovich. "Length of Stay After PCI." American College of Cardiology, 5 Aug. 2019.
4. Amin AP, et al. "Costs Associated With Access Site and Same-Day Discharge Among Medicare Beneficiaries Undergoing Percutaneous Coronary Intervention: An Evaluation of the Current Percutaneous Coronary Intervention Care Pathways in the United States." J Am Coll Cardiol Intv. 2017 Feb, 10 (4) 342-351.
5. Seto AH, Shroff A, Abu-Fadel M, et al. "Length of stay following percutaneous coronary intervention: An expert consensus document update from the society for cardiovascular angiography and interventions." Catheter Cardiovasc Interv. 2018 Oct 1;92(4):717–731.
6. Seong-Man Kim et al., "Novel diagnostic catheter specifically designed for both coronary arteries via the right transradial approach. A prospective, randomized trial of Tiger II vs. Judkins catheters." Int J Cardiovasc Imaging. Jun-Aug 2006;22(3-4):295-303.
7. Joan CM et al., "Impact of One-Catheter Strategy with TIG I Catheter on Coronary Catheterization Performance and Economic Costs." Arq Bras Cardiol. 2019; 113(5): 960-968