

Editorial



OPEN ACCESS

Received: Aug 4, 2019

Accepted: Aug 9, 2019

Correspondence to

Hoyoun Won, MD, PhD

Cardiovascular & Arrhythmia Center, Chung-Ang University Hospital, Chung-Ang University College of Medicine, 120, Heukseok-ro, Dongjak-gu, Seoul 06973, Korea.
E-mail: nowhy@cau.ac.kr

Copyright © 2019. The Korean Society of Cardiology

This is an Open Access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (<https://creativecommons.org/licenses/by-nc/4.0>) which permits unrestricted noncommercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ORCID iDs

Hoyoun Won 
<https://orcid.org/0000-0001-7880-3477>

Conflict of Interest

The authors have no financial conflicts of interest.

Author Contributions

Conceptualization: Won H, Kim SW; Data curation: Won H; Investigation: Won H, Kim SW; Methodology: Won H; Supervision: Kim SW; Validation: Won H; Writing - original draft: Won H; Writing - review & editing: Won H, Kim SW.

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

<https://e-kcj.org>

The Second Report from K-PCI Registry: a Step toward Continuous Systemic Monitoring of Korean Percutaneous Coronary Intervention Practice

Hoyoun Won , MD, PhD, and Sang-Wook Kim, MD, PhD

Cardiovascular & Arrhythmia Center, Chung-Ang University Hospital, Chung-Ang University College of Medicine, Seoul, Korea

► See the article “The Current Status of Percutaneous Coronary Intervention in Korea: Based on Year 2014 & 2016 Cohort of Korean Percutaneous Coronary Intervention (K-PCI) Registry” in volume 49 on page 1136.

Cardiovascular disease is the second leading cause of death in Korea. Percutaneous coronary intervention (PCI) is the important treatment modality and has been increasingly developed during several decades. In the United States, the American College of Cardiology (ACC) created the National Cardiovascular Data Registry (NCDR) nearly 20 years ago.¹⁾ CathPCI registry as the first NCDR was initiated to collect comprehensive clinical, procedural and outcome information of patients who underwent diagnostic catheterization and/or PCI procedures in 1998. CathPCI registry has provided the data of adherence to ACC/American Heart Association (AHA) practice guideline, procedural standards and appropriate use criteria for coronary revascularization since then.²⁾ Similarly, Japanese Association of Cardiovascular Intervention and Therapeutics (CVIT) created Japanese percutaneous coronary intervention (J-PCI) registry in 2010. J-PCI registry has been incorporated into the NCDR system in 2013. European Association of Percutaneous Cardiovascular Interventions (EAPCI) retrospectively surveyed interventional cardiology practice in 16 European countries from 2010 to 2015.³⁾ EAPCI registry was initiated in 2015.

Unlike other countries' effort to develop their own PCI registries, no nationwide PCI registry had been established in Korea despite of several domestic multicenter registries. Therefore, supported by Korean Society of Cardiology (KSC) and Korean Society of Interventional Cardiology (KSIC), Korean PCI (K-PCI) registry was initiated in 2015. The first K-PCI registry retrospectively collected demographic and clinical characteristics, procedural complications and in-hospital outcomes in patients who underwent PCI from January 1, 2014 to December 31, 2014 from 92 voluntarily participating hospitals (53.2%) among a total 173 PCI centers. Given the fact that the K-PCI registry collected data of 40,467 PCI procedures, more than 70% of overall annual procedures, it means that the data is fairly reliable in terms of representative nature. Two reports were simultaneously published in 2017. Jang et al.⁴⁾ showed status of PCI in 2014, including pattern of treatment in acute myocardial infarction (MI), frequency of intravascular imaging and non-invasive tests, vascular access, device use (91.3% of drug eluting stent), in-hospital outcomes and clinical characteristics according to

procedure volume. Gwon et al.⁵⁾ demonstrated the practice pattern of PCI using the algorithm for the Korean PCI practice pattern (KP3) developed by expert consensus meetings which was modified appropriate use criteria in the United States. KP3 was classified into 3 categories, A, B, and C. KP3 class A was classified if the strategy was strongly proven in many randomized controlled trials and/or treated more conservatively than medical treatment or bypass surgery. KP3 class C was classified if the procedure was done by less evidence-based strategy and/or treated more aggressively than medical treatment or bypass surgery. KP3 class B was classified as between KP3 class A and C.

K-PCI registry was planned to report every two years so that it would provide opportunities to advance the understanding of the identification of trends, improvement of care, and further policy proposals. In the current issue, Shin et al.⁶⁾ released the second K-PCI report of 2016, 2 years after the first K-PCI registry. In this report, a total of 48,823 PCI procedures were enrolled from January 2016 to December 2016, increased by 8.7% compared to the first report, although the number of participating centers was same as before. Overall patient characteristics and PCI practices in 2016 were not significantly different from those in 2014. The biggest change from 2014 to 2016 was the decrease the occurrence of in-hospital MI after PCI from 1.6% to 0.7%. Significant decrease in in-hospital adverse cardiovascular event was mainly driven by significant decrease in non-fatal MI. The reason is unclear yet, but it could be explained in part by the changes in drug eluting stent pattern and/or by the introduction of new P2Y12 inhibitors. New P2Y12 inhibitors was firstly introduced into Korea in 2011. The proportion of prescription after MI was increased from 10.6% in 2010–2012 to 29.3% in 2013–2015. Yet, data from K-PCI registry have limitations. Detailed information of stent type or medications and clinical follow up after hospital discharge were not included.

New findings were included in this second report. ST-elevation MI (STEMI) metrics including door-to-balloon time (DTBT), symptom-to-door time and total ischemic time were reported. Current clinical guidelines emphasize the DTBT of 90 minutes or less. Recently, the diagnosis of STEMI, the first medical contact, to balloon time within 120 minutes is recommended. The total ischemic time, measured from symptom onset to the reperfusion, is considered as one of the important prognostic factors. In this K-PCI report, the proportion of DTBT achieved less than 90 minutes were 83.3% and the total ischemic time within 180 minutes was 54.1%. It seems to be acceptable, but we need more effort to achieve the goals if they were compared with the result of NCDR, in which the proportion within the threshold of DTBT was 93.5% in 2014.⁷⁾ Also, it is recommended to raise public awareness of how to recognize symptoms of acute MI to decrease patient delays. All the effort to minimize systemic delay will improve the quality of care and clinical outcomes.

K-PCI registry is the largest PCI registry in Korea and voluntarily participated from academic members without financial support. To continue the K-PCI project and lead policy relevant data in the future, government support including financial support is necessary like other countries. Series of reports from K-PCI registry will present the contemporary PCI practices and the database framework will facilitate further active clinical researches. In conclusion, the second K-PCI report provided further insight into understanding the current status of K-PCI practices. More nationally representative K-PCI registry will broaden our perspectives.

REFERENCES

1. Brindis RG, Fitzgerald S, Anderson HV, Shaw RE, Weintraub WS, Williams JF. The American College of Cardiology-National Cardiovascular Data Registry (ACC-NCDR): building a national clinical data repository. *J Am Coll Cardiol* 2001;37:2240-5.
[PUBMED](#) | [CROSSREF](#)
2. Dehmer GJ, Hirshfeld JW, Oetgen WJ, et al. CathKIT: improving quality in the cardiac catheterization laboratory. *J Am Coll Cardiol* 2004;43:893-9.
[PUBMED](#) | [CROSSREF](#)
3. Barbato E, Dudek D, Baumbach A, Windecker S, Haude M. EAPCI registries: a first step towards systematic monitoring of European interventional cardiology practice. *EuroIntervention* 2017;13:Z6-7.
[PUBMED](#) | [CROSSREF](#)
4. Jang JS, Han KR, Moon KW, et al. The current status of percutaneous coronary intervention: based on year 2014 cohort of Korean Percutaneous Coronary Intervention (K-PCI) registry. *Korean Circ J* 2017;47:328-40.
[PUBMED](#) | [CROSSREF](#)
5. Gwon HC, Jeon DW, Kang HJ, et al. The practice pattern of percutaneous coronary intervention in Korea: based on year 2014 cohort of Korean Percutaneous Coronary Intervention (K-PCI) Registry. *Korean Circ J* 2017;47:320-7.
[PUBMED](#) | [CROSSREF](#)
6. Shin DH, Kang HJ, Jang JS, et al. The current status of percutaneous coronary intervention in Korea: based on year 2014 & 2016 cohort of Korean Percutaneous Coronary Intervention (K-PCI) Registry. *Korean Circ J* 2019;49:1136-51.
[PUBMED](#) | [CROSSREF](#)
7. Masoudi FA, Ponirakis A, de Lemos JA, et al. Trends in U.S. Cardiovascular Care: 2016 Report From 4 ACC National Cardiovascular Data Registries. *J Am Coll Cardiol* 2017;69:1427-50.
[PUBMED](#) | [CROSSREF](#)