Abstract: P3392

Potential of imaging-guided PCI for event suppression in Japanese acute myocardial infarction patients: J-MINUET substudy

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Topic(s):
Imaging: Coronary Artery Disease

Citation:

BACKGROUND:

Intravascular ultrasound (IVUS) and Optical Coherence Tomography (OCT) has been widely used in clinical settings. Although favorable results of imaging-guided percutaneous coronary intervention (PCI) compared with angio-guided PCI were observed in several studies, impacts of institutional-based usage frequency, about imaging-guided PCI, have not been well elucidated.

METHODS:

To elucidate the impact of imaging-guided PCI and the effects of frequency of its usage, we analyzed data of the Japanese registry of acute Myocardial INfarction diagnosed by Universal dEfinition (J-MINUET). This was a prospective and multicenter registry consisting of 3,283 AMI patients, who were hospitalized within 48 hours of onset from July 2012 to March 2014. Clinical follow-up data was obtained for 3 years. In this sub-study, a total of 2,788 patients who underwent urgent PCI having detailed procedural information were enrolled. We analyzed the differences of utilization rates of imaging-guided PCI among the participating institutions and the impacts for the clinical events. The participating institutions were divided into 3 groups by the frequency of intravascular imaging usage: low frequency institutions: under 50%; moderate frequency institutions: 50% to 90%; and, high frequency institutions: over 90%.

RESULTS:

In this cohort registry, patients were enrolled from 28 institutions. The utilization rate of coronary imaging varied widely depending on each institution from 15.4% to 100% (mean 85.7%±24.3, median 97.4%). When the institutions were divided into 3 groups by the frequency of intravascular imaging usage, four low frequency institutions enrolled 295 patients, five moderate frequency institutions enrolled 624 patients, and 19 high frequency institutions enrolled 1,491 patients. Although the incidence of MACE (death, MI, stroke, cardiac failure, or revascularization for unstable angina) decreased stepwise (33.2%, 23.7%, and 19.7%) (gray bar in the Figure), the event rates of the imaging-guided PCI cases among the 3 groups were comparable (21.6%, 21.9%, and 19.6%) (white bar in the Figure). On the other hand, a gradual event reduction between the 3 groups was observed in the angio-guided PCI cases (black bar in the Figure). In comparison of MACE rate between imaging-guided and angio-guided PCI, there were statistically significant differences in the low frequency and moderate frequency institutions (p=0.001 and p=0.012, respectively). In contrast, comparable event rates were observed in the high frequency institutions (p=0.441).
CONCLUSIONS:

In Japanese ACS patients treated with imaging-guided PCI, better suppression of clinical events during 3-year was found in the institutions with the more frequent use of intravascular imaging, mainly due to stepwise event suppression in the cases of angio-guided PCI. On the other hand, the clinical benefit of coronary imaging was obtained independently of the frequency of use and its experience.