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Stroke rate after long-term antiplatelet medication strategy in percutaneous coronary intervention patients using Korean National Health Insurance Service (NHIS) customized health information database


Methods: From the NHIS customized health information database (June 2006 - July 2014, 9 years), patients over 18 years old who underwent PCI were selected.

Inclusion criteria for both aspirin, clopidogrel groups were being event free for 12 months, and maintaining consistent antiplatelet regimen. The stroke rate was defined with concomitant imaging modalities of the brain including computed tomography or magnetic resonance for ensuring the diagnostic accuracy.

Results: From 2006 through 2014, a total of 20,483 patients were enrolled at the NHIS customized health information database: 11,276 enrolled in the aspirin and 9,207 enrolled in the clopidogrel. The two antiplatelet therapies were well balanced with regard to most baseline variables. The patients treated with aspirin as compared with clopidogrel was no difference in the incidence rates of stroke (Table 1, clopidogrel = 3.22 vs aspirin = 3.26, HR=1.069, p=0.658).

Conclusion: For the antiplatelet medication strategy beyond 12 months after drug eluting stent implantation, clopidogrel alone strategy did not reduce the stroke rate compared to aspirin alone.

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Clinical efficacy of the combination of atorvastatin and perindopril in prevention of cardiovascular outcomes and mortality in high-risk hypertensive patients randomized to the ASCOT-LLA trial

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Methods: Among 10305 patients randomized in ASCOT-LLA, 3876 patients allocated to the atorvastatin-based regimen were included in this post-hoc analysis: 1950 in the AmP A group and 1926 the AmPP group. The study population included patients with documented hypertension with no prior history of MI or clinical CHD, but with three or more risk factors for cardiovascular disease and fasting total cholesterol of ≤6.5 mmol/L. Mean treatment duration was 2.0 and 1.9 years for the AmPA and AmPP groups respectively.

Conclusion: Compared with the AmPP group, the decreases in total and LDL-cholesterol between the start and end of treatment in the AmPA group were 0.717 mmol/L (95% CI, -0.783, -0.651; p<0.001) and 0.708 mmol/L (95% CI, -0.773, -0.643; p<0.001) respectively.

VASCULAR SMOOTH MUSCLE IN DEVELOPMENT AND GENETIC DISEASE

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Modeling Loey-Dietz syndrome vascular pathological features with patient specific iPSC-derived vascular smooth muscle cells

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Background: Loey-Dietz syndrome (LDS) is an autosomal-dominant connective tissue disorder associated with high risk of aneurysms and dissections. Its underlying mechanism is poorly understood. The advance of induced pluripotent stem cells (iPSCs) offer desirable opportunities for creating disease-specific cellular models and platform to investigate the disease mechanisms and optimize therapeutic strategies.

Methods and results: Peripheral blood mononuclear cells (PBMCs) were obtained from two LDS patients carrying TGFBR2 R93W and TGFBR1 R487W mutations and one healthy volunteer. PBMCs were reprogrammed into induced pluripotent stem cells (iPSCs) by electroporation with episomal plasmids. The generated iPSCs retained the same mutation with PBMCs, were integration free, presented normal karyotype, expressed pluripotent markers of NANOG, OCT4, SOX2, and TRA-1–60, and differentiated into free germ layer in vivo. Functional vascular smooth muscle cells (VSMCs) were derived from the generated iPSCs. We use LDS patients-specific iPSCs derived VSMCs to recapitulate the key vascular pathophysiological course of LDS. Q-PCR and Western blot results showed significant reduced expression of differentiated VSMC markers (−SM-A, calponin, SM22α) in LDS-iPSCs derived VSMCs compared with VSMCs derived from the healthy volunteer specific iPSCs (control). Angiotonins agent carbachol stimulation resulted in significant reduced contractility and reduced intracellular calcium flux of LDS-iPSCs derived VSMCs compared with control. Moreover, LDS-iPSCs derived VSMCs exhibited impaired extracellular matrix synthesis as reflected by reduced expression of COL1A1, COL3A1 and fibronectin both in mRNA and protein levels compared with control. In addition, phosphorylation of Smad2 was significantly reduced in LDS-iPSCs derived VSMCs, suggesting impaired canonical TGFβ signaling pathway.

Conclusion(s): LDS patients-specific iPSC derived VSMCs manifested the key vascular pathological features of LDS. This model may provide a promising platform to investigate disease mechanisms and explore new therapeutic strategies.

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