Abstract: P6402

Ischemic and bleeding events during dual antiplatelet therapy after second-generation drug-eluting stent implantation in hemodialysis patients: a propensity score-matched analysis

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Background:
Dual-antiplatelet therapy (DAPT) after second-generation drug eluting stent (2-DES) implantation reduced the risk of stent thrombosis and subsequent ischemic events, with an increase in bleeding risk. Although chronic kidney disease patients have high ischemic and bleeding risk, little is known about both risks in hemodialysis patients after 2-DES implantation during DAPT.

Method:
From July 2009 to March 2017, we retrospectively analyzed post-discharge major adverse cardiac and cerebrovascular events [MACCE: cardiac death, myocardial infarction, target vessel revascularization (TVR) and cerebral infarction] and bleeding events in 644 consecutive patients during DAPT after 2-DES implantation. We divided them into 2 groups [102 hemodialysis (HD) and 518 non-hemodialysis (Non-HD) patients, mean age, 71±10 years] after excluding 24 patients (lost to follow up and peritoneal dialysis). Follow-up period was 49±24 months. Median DAPT duration was 12 months. The primary endpoint was MACCE. The secondary endpoint was bleeding events according to the Bleeding Academic Research Consortium (BARC) type 2, 3, or 5. MACCE and bleeding events were compared between HD and Non-HD by using the propensity score-matching (PSM) method.

Results:
Among the 620 eligible patients, the primary and secondary events occurred in 207 (33.3%) and 76 (12.3%) patients, respectively. The rates of unadjusted MACCE [HD vs Non-HD: 53.9% vs 29.3%; Hazard ratio (HR) 2.39, p<0.01] and bleeding events (HD vs Non-HD: 21.6% vs 10.4%; HR 2.50, p<0.01) were significantly higher in HD than Non-HD.

After 1-to-1 propensity score adjustment for baseline differences (hypertension, diabetes mellitus, low ejection fraction, low albumin, anemia, and high C-reactive protein), a total of 160 patients (80 HD vs 80 Non-HD) was created. The rate of MACCE [HD vs Non-HD: 52.5% vs 31.3%; adjusted HR 2.04, p<0.01] was significantly higher in HD than Non-HD. Regarding MACCE, cardiac death (HD vs Non-HD: 18.8% vs 8.8%; adjusted HR 2.65, p=0.03) and TVR (HD vs Non-HD: 15.0% vs 6.3%; adjusted HR 2.74, p=0.046) occurred significantly higher in HD. On the other hand, bleeding events did not exhibit significant differences though HD had a numerically higher event rate (HD vs Non-HD: 25.0% vs 16.3%; adjusted HR 1.68, p=0.15), indicating that the bleeding risk in HD would be strongly dependent on the patient's background.

Conclusions: As a result of PSM, HD was shown to contribute to ischemic risk rather than bleeding risk. Even in the 2-DES era, HD was an independent risk factor of cardiac death and TVR. Therefore, further study on the current regimen of DAPT would be necessary while balancing both ischemic and bleeding risk.