Cardiovascular outcomes of clopidogrel and aspirin vs ticagrelor and aspirin in geriatric population with acute coronary syndrome—a systematic review and meta analysis

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Topic(s):
Treatment

Background:
The current guidelines of the European Society of Cardiology recommends dual antiplatelet treatment (DAPT) including a new-generation P2Y12-inhibitor ticagrelor and aspirin for patients with acute coronary syndrome (ACS) with or without ST segment elevation (STEMI). However, the efficacy and safety profile of standard DAPT regimen clopidogrel and aspirin (CDAPT) vs. new DAPT regimen ticagrelor and aspirin (TDAPT) is controversial in geriatric population with age >70 years given this population is a high risk for bleeding due to frailty and recurrent of ACS.

Objective:
To assess the efficacy and safety of DAPT regimens including CDAPT or TDAPT for elderly patients >70 years presenting with ACS with or without ST-segment elevation.

Methods:
Electronic databases (PubMed, Embase, Scopus, Cochrane) were searched from inception to November 28th, 2020. Using a generic invariance weighted fixed effects model, Hazard ratios (HRs) and their 95% confidence intervals (CIs) from individual studies were converted to Log HRs and corresponding standard errors, which were then pooled. The primary outcome was major adverse cardiac and cerebrovascular events (MACCE) and was defined as a composite of death, myocardial infarction and stroke. The secondary outcome was any major bleeding events.

Results- A total of four studies with 18365 participants was included in our analysis. Mean age was 79.4 and 79.2 in the CDAPT and TDAPT groups respectively. Average follow up period was 12 months. There is no difference in MACCE among CDAPT and TDAPT (HR 0.93, 95%CI 0.86-1.01; P=0.10). However, TDAPT is associated with high risk of major bleeding as compared to CDAPT (HR 1.15, 95%CI 1.02-1.29; P=0.02) (Figure 1). We had no publication bias in our results (Egger’s regression p>0.05).

Conclusion- Amongst geriatric patients aged 70 years or older with ACS with or without STEMI, TDAPT has the same MACCE as compared to CDAPT while TDAPT can have high major bleeding.
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