Angiotensin-Converting Enzyme Inhibitors and Angiotensin Receptor Blockers in Acute Coronary Syndrome Implications for Platelet Reactivity?

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BACKGROUND

- Angiotensin-converting enzyme inhibitors (ACEI) are preferred over angiotensin receptor blockers (ARB) in ACS
- **In a pilot-study treatment with ACEI was associated with increased platelet reactivity compared to ARB**

Methods and Results

- We measured on-treatment residual platelet reactivity in response to arachidonic acid (AA), adenosine diphosphate (ADP), SFLLRN, AYPGKF, and collagen by multiple electrode aggregometry
- **197 ACS patients (165 ACEI, 32 ARB)** on dual antiplatelet therapy (DAPT) with aspirin and either prasugrel or ticagrelor were included
- **On-treatment residual AA-, ADP, and SFLLRN-inducible platelet reactivity was significantly higher in patients with ACEI (all p < 0.05).**
- There was a trend for higher AYPGKF- and collagen-inducible platelet reactivity (p = 0.053 and p = 0.082) in patients with ACEI.
- **The incidence of high on-treatment residual platelet reactivity AA was significantly higher in patients with ACEI (52 [31.5%] vs. 3 [9.4%] ARB; p = 0.019).**

Central Figure

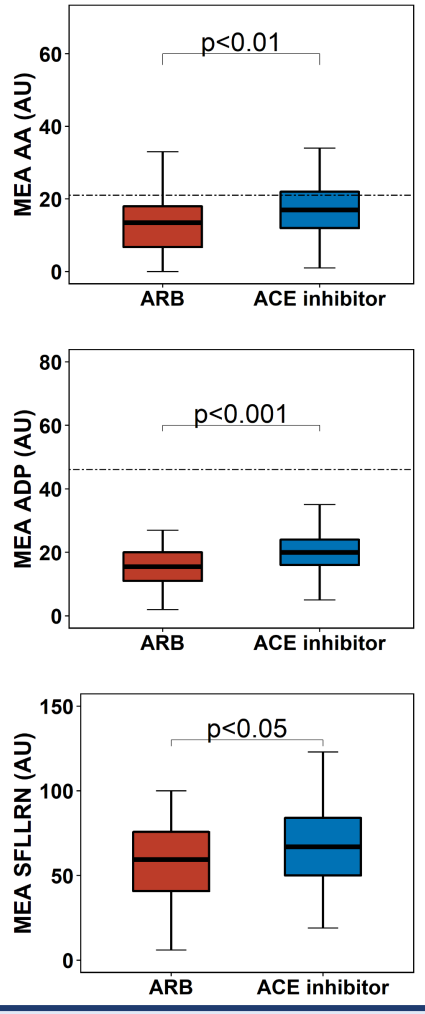

Table 1. Baseline characteristics.

	ARB	ACEI	*p*
Age, years	62 (54-72)	56 (48-64)	0.003
Female sex	8 (25.0%)	28 (17.0%)	0.409
Creatinine	1.1 (0.9-1.4)	0.9 (0.8-1.0)	<0.001
hs-CRP	1.4 (0.9-3.2)	1.1 (0.5-3.7)	0.556
proBNP	675 (267-1357)	656 (256-1269)	0.739
Diabetes	9 (29.0%)	41 (25.2%)	0.819
HLP	24 (77.4%)	124 (76.5%)	1.000
BMI	29.4 (26.7-32.3)	27.6 (25.1-29.9)	0.035

Conclusions

- **ACE inhibitors are associated with increased on-treatment residual platelet reactivity in ACS patients with potent DAPT.**
- Further clinical trials are needed to elucidate the role of RAAS blockade with ACEI and ARB in ACS patients treated according to current standards.

Declaration of interest

None.