

Pharmacologie médicale

Bordeaux PharmacoEpi
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Effectiveness and safety of ticagrelor compared with clopidogrel and prasugrel: results from a cohort study in the nationwide French claims and hospitalisation database (SNIIRAM)

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Conflicts of interest

- Unconditional grant from AstraZeneca
- EMA EUPAS registry n°5987

Background & objective

- Request from French health technology assessment agency for a real-life benefit-risk evaluation of ticagrelor in the secondary prevention of acute coronary syndrome (ACS)
- To compare the 1-year incidence of ACS, stroke, all-cause death and major bleeding after an ACS
 - Ticagrelor versus clopidogrel
 - Ticagrelor versus prasugrel

Methods

- **Design:** Cohort study in French nationwide claims database (SNIIRAM)
 - All patients hospitalised in 2013 for unstable angina, STEMI, or NSTEMI*
 - With intensive care unit (ICU) stay during index hospitalisation
 - 1-year history and 1-year follow-up in database
- **Exposure:** 1st antiplatelet agent dispensing within a month after discharge
- **Outcomes** (*on treatment*)
 - Effectiveness: composite of ACS* with ICU stay, stroke*, death, and each individual event
 - Safety: major bleeding*
- **Statistical analysis**
 - Matching 1:1 on gender, age, high dimensional propensity score (hdPS), stratified by index diagnosis (UA, STEMI, NSTEMI)
 - Cox proportional hazards or Poisson model adjusted on aspirin at index date, incident ACS or naive APA, and time-dependent variables for exposure to beta-blockers, aspirin, statins, ACEI or ARB

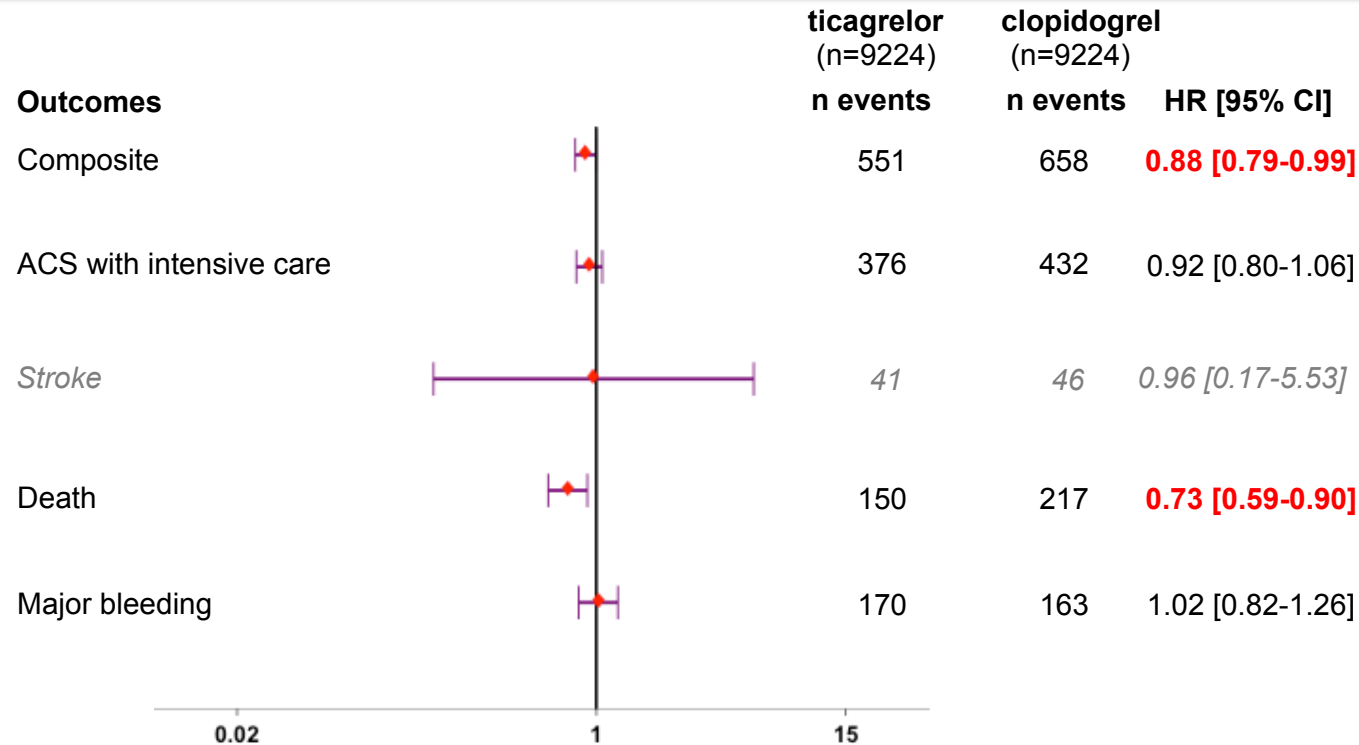
* *Primary diagnosis of hospitalisation*

Patients characteristics (matched populations)

	Clopidogrel n = 9224	Ticagrelor n = 9224	SD* %	Prasugrel n = 6752	Ticagrelor n = 6752	SD* %
Gender male	73.5%	73.5%	0.0	84.9%	84.9%	0.0
Age, Mean (± SD)	66.5 (12.4)	66.5 (12.4)	0.0	58.5 (10.0)	58.4 (10.0)	0.0
Primary diagnosis at index ACS						
Unstable angina	31.4%	31.4%	0.0	18.5%	18.5%	0.0
STEMI	51.3%	51.3%	0.0	72.8%	72.8%	0.0
NSTEMI	17.3%	17.3%	0.0	8.7%	8.7%	0.0
Procedures performed (index ACS)						
Percutaneous coronary intervention	84.7%	84.5%	-0.5	94.3%	94.5%	1.1
Coronary artery by-pass grafting	0.2%	0.2%	-	0.0%	0.0%	-
Risk factors						
Diabetes mellitus	22.5%	21.7%	-1.8	19.3%	17.5%	-4.6
Hypertension	17.9%	17.2%	-2.0	10.1%	8.9%	-4.1
Coronary artery disease	13.6%	13.9%	1.0	8.6%	8.9%	1.4
Acute coronary syndrome	7.1%	7.3%	0.7	3.9%	4.4%	2.8
Peripheral arterial disease	4.6%	4.7%	0.5	2.6%	2.7%	0.6
Congestive heart failure	3.4%	3.3%	-0.9	1.5%	1.5%	-0.4
Ischemic or undefined stroke	2.1%	1.7%	-2.7	0.7%	0.9%	-
Major bleeding	1.5%	1.4%	-1.1	0.9%	0.9%	-1.1

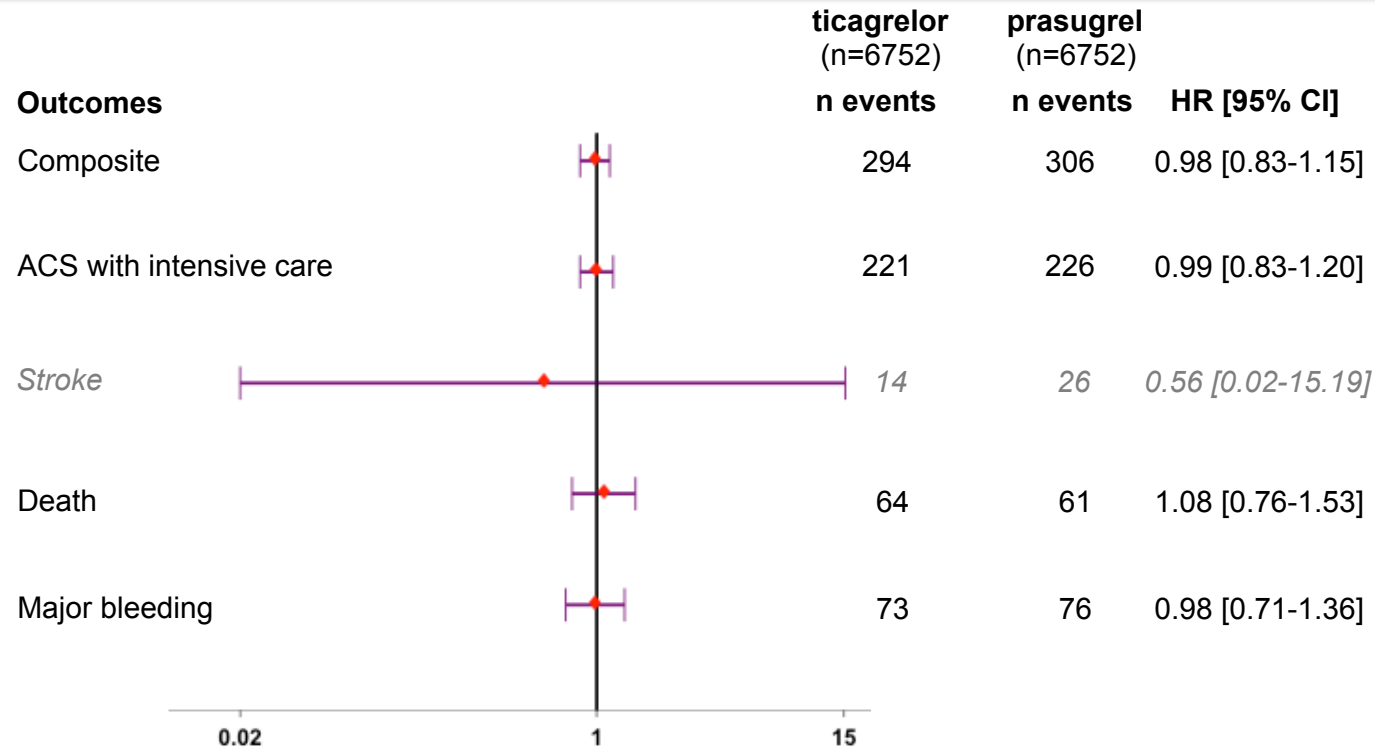
* Standardized difference

Ticagrelor versus clopidogrel



- Significant risk reduction for composite (12%) and all-cause death (27%)
- But no statistical difference for ACS and stroke, and about same incidence for major bleeding
- Consistent with those of PLATO trial: 16% reduction in composite (cardiovascular death, stroke, MI) and 22% reduction in all-cause death

Ticagrelor versus prasugrel



- No difference for all outcomes