**Appendix Table E94. Phenotypic test details in studies assessing the predictive ability of PFA-100 in patients with ischemic heart disease**

| **Author, year [ref]****UID****Country****Study Name** | **Test/Device name** **Device category Device name & manufacturer\*** | **Agonist used** | **Sample Collection and Procurement****Anticoagulant used****Interval between clopidogrel doses and blood sampling (in days)** **Interval between sampling and testing (in days):** | **Grouping of Phenotypes\*\* [Definition]**  | **Rational for the grouping of phenotypes reported (Yes/No)** **[short description]** | **Frequency of phenotypes**  |
| --- | --- | --- | --- | --- | --- | --- |
| Malek,200717295159PolandNR | Platelet function analysisPFA-100point-of-care device– PFA-100; Dade Behring, Germany | ADP | sample collected after the acute phase of ACS (2-9 days after admission)3.2% sodium citrateNRNR | Group 1 with CADP-CT<104 s group 2 with CEPI-CT <190 s group 3 with CADP CT <104 s and CEPI-CT <190 s both CT values above the cut-off limits  | not explicitly reported. | Group 1 (n=10, 11%), group 2 (n=10, 11%), group 3 ( n=9, 9.9%) a control group (n=62, 68.1%). |
| Breet, 201020179285NetherlandsPOPULAR  | PFA 100the Dade PFAcollagen/ADP test cartridge(PFA-100system)SiemensHealthcare Diagnostics Products GmbH,Marburg, Germany | ADP | NR3.8% buffered citrated bloodNR2 hours  | PFA ≤147 seconds | Based on ROC curve | NR |
| Breet, 201020179285NetherlandsPOPULAR  | INNOVANCE® PFA P2Y\*NRNR | ADP, PGE1, calcium | NR3.8% buffered citrated bloodNR2 hours  | PFA ≤59 seconds | Based on ROC curve | NR |
| Foussas,200717892990GreeceNone | PFA-100Closure time Dade-Behring, Collagen+ADP or epiephrine Marburg, Germany | Collagen+ADP or epiephrine | Blood samples obtained after femoral or brachial arterial sheath insertion in the catheterization laboratory. After rejection of the first few milliliters, blood for PFA-100 analysis was collected into tubes.The time required to occlude the aperture is automatically reported as the closure time (CT). Measurements are terminated after ≤300 seconds.citrate Aspirin+clopidogrel loading done >12 hr before stenting; mean/SD 37.4/23.5 hrwithin 1 hour | CEPI-CT >193 sec (responders)CEPI-CT ≤193 sec (nonresponders) | Based on literature | CEPI-CT >193 sec 489 (79.9%)(responders)CEPI-CT ≤193 sec (nonresponders) 123 (20.1%) |
| Smit,201020889993NetherlandsON-TIME-2 | PFAPlatelet function analyserPFA-100/ Dade Behring, Marburg, Germany | 2 mg type I collagen with either 50 mg epinephrine bi-tartrate (col-EPI) or 50 mg ADP (col-ADP) | Whole blood; collected before PCINRNRClopidogrel came firstNR | quartiles 1-4 | Not explicitly reported | quartiles 1 162 (25%)quartiles 2 162 (25%)quartiles 3 162 (25%)quartiles 4 162 (25%) |
| Huczek,200818301358PolandNR | PFA-100 PFA-100Dade Behring, Newark, Delaware | epinephrine and collagen (for Thromboxane A2 pathway) and ADP and collagen (for ADP-dependent pathway) |  Venous blood; day 3 & 30 after stenting3.8% buffered sodiumcitrate0.08 days (2 hours)Clopidogrel came first0.02-0.04 days (0.5-1 hr) | group I (CEPI-CT ≥193 seconds and CADP-CT ≥130 seconds, i.e.complete platelet function inhibition)Group II (either CEPI-CT<193 seconds or CADP-CT<130 seconds, i.e. partial platelet function inhibition)Group III (CEPI-CT<193 seconds and CADP-CT<130 seconds, i.e. no platelet function inhibition). | Previously published information | group I 67 (53.6%)Group II 21(16.8%)Group III 37 (29.6%) |
| Moerenhout,201020211306Belgium NR | PFA-100platelet function analyzer (PFA-100 C/ADP)NR | Collagen and ADP | blood before PCINR0.5 days (12 hrs) Clopidogrel came firstNR | nonresponder (PFA value <71 seconds)responder (PFA value >71 seconds) | Based on literature | nonresponder (PFA value <71 seconds) 17 (7%)responder (PFA value >71 seconds) 225 (93%) |
| Siller-Matula,200919135705AustriaNR | PFA-100PFA-100Dade Behring, Marburg, Germany | collagen and adenosine diphosphate(ADP) | 1st blood sample: in catheterization laboratory, after PCI and after 250 mg IV aspirin 2nd blood sample: 20‑24 hours after PCI3.8% citrateNRClopidogrel came first0.04 days (1 hour) | Collagen ADP closure time between 65-120 s by PFA-100Collagen ADP closure time between <65 s & >120 s by PFA-100 | Normal ranges as reported by manufacturer | Collagen ADP closure time between 65-120 s by PFA-100 ; 20 (67%)Collagen ADP closure time between <65 s & >120 s by PFA-100; 10 (33%) |
| Gori,200819132241Italy RECLOSE | PFA-100 systemNRDade-Behring, Marburg, Germany | Collagen/epinephrine or collage/ADP | Platelet reactivity measured 12 to 18 hr after clopidogrel loadingcitrateFor patients receiving in the catheterization laboratory both the loading dose of clopidogrel and a IIb/IIIa inhibitor, blood samples were obtained after six days while the patient was on the 75-mg maintenance dose of clopidogrel.NR | RPR by CEPI PFA-100 (<203 sec)No RPRPatients at high risk for adverse events:RPR by CEPI PFA-100 (<238 sec)RPR by CADP PFA-100.(<105 sec) | previous literature  | RPR by CEPI PFA-100 (<203 sec);133/746 (18%) No RPR; 613/746 (82%)RPR by CEPI PFA-100 (<238 sec) :238/746 (32%)RPR by CADP PFA-100.(<105 sec) :196/398 (49%) |
| Siller-matula, 2012{Siller-Matula, 2012 18177 /id}22260716AustriaPEGASUS-PCI | PFA-100platelet function analyzerThe PFA-100 (Dade Behring, Marburg, Germany) | ADP | Blood samples from patientswere obtained from the arterial sheath (6F) in the catheterizationlaboratory directly post-PCI and at least 5 min afterintravenous infusion of aspirin.3.8% sodium citrate NRperformed up to 24 h after blood sampling | Clopidogrelnon-responderaccording to MEA (≥ 48 U)Clopidogrel responderaccording to MEA(< 48 U)n = 321 (80%) | ref 16, 28 | non-respondern = 81 (20%)respondern = 321 (80%) |
| Chiu 2011{Chiu, 2011 18180 /id} 21925055TaiwanNR | PFA-100platelet function analyzerThe PFA-100 (Dade Behring, Marburg, Germany) | Collagen and ADP | Blood samples prior to cardiac catheterization3.8% sodium citrate NR; clopidogrel came first0.08 days (2 hours) | CADP-CT<95 sCADP-CT≥95 s  | Based on ROC curve (to predict primary endpoint [MACE]) | CADP-CT<95 s = 29 (27%)CADP-CT≥95 s = 105 (73%) |

ADP= adenosine 5'-diphosphate; Ag= aggregation; PGE1=prostaglandin; ROC=receiver operating characteristic; AUC=area under the curve; IPA= inhibition of platelet aggregation; LTA= light transmission aggregometry; MEA= multiple electrode platelet aggregometry; PFA= platelet function analysis; TEG=thromboelastography; sTEG=short thromboelastography; VASP = vasodilator-stimulated phosphoprotein; VASP-FCT=vasodilator-stimulated phosphoprotein flow cytometry; CEPI=collagen-epinephrine ; CADP=collagen-ADP; CT=closure times; HCPR=high on-clopidogrel platelet reactivity; PCI = percutaneous coronary intervention; RPA= residual platelet aggregation; GP= glycoprotein; HRP=high platelet reactivity; NPR=normal on-treatment platelet reactivity; HPPR= high post-treatment platelet reactivity; MPA= maximum platelet aggregation; RPR= residual platelet reactivity; OTPR=on-treatment platelet reactivity; DPAI= degree of platelet aggregation inhibition; PRU=P2Y12 reaction units; CRP=C-reaction protein; PRI=platelet reactivity index; LR=low responder; IQR=interquartile range; AA= arachidonic acid; LD=loading dose; MD=maintain dose; SD=standard deviation; NR=not reported