**Appendix Table E53. Results from studies assessing the ability of VASP to predict stent thrombosis in patients with ischemic heart disease**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Author,year**  **UID**  **Country**  **Study name** | **Treatment** | **Phenotypic Test Used [index test]** | **Clinical Outcome** | **Outcome Definition** | **Timing of measurement** | **Index test result: category (e.g., HPR+) – ONE ROW PER PHENOTYPE GROUP** | **Outcome status (e.g., bleeding or no bleeding)** | **No. with outcome status within phenotype group** | **Comparative metric (OR, RR, HR)** | **95% CI** | **P (between which groups?)**  **[statistical test]** | **Adjusted?**  **[YES/NO/NR]**  **If YES, for what factors?** | **Procedures for multiple comparisons [YES, NO, NR]** | **Comments (e.g., additional data in figures)** |
| Freynhofer, 2011{Freynhofer, 2011 1 /id}  21614416  Austria  NR | Clopidogrel+aspirin | VASP | Definite or probable stent thrombosis | Definite or probable stent thrombosis |  | PRI>60.2% (high reactivity, poor response) n=186 | Stent thrombosis | 5 | OR (calculated)= 6.94 | 0.4-136.7 | P=0.19  (>60.2% vs ≤60.2)  [Fisher's exact] |  |  | Get n’s from Fig 1 (pasted in on last page of this form) |
|  |  |  |  |  |  | VASP result: PRI≤60.2% (low reactivity, good response) n=114 |  | 0 |  |  |  |  |  | Get n’s from Fig 1 (pasted in on last page of this form) |
| Blindt, 2007{Blindt, 2007 189 /id}  18064332  Germany  NR | 75 mg clopidogrel | VASP-PRI | Stent thrombosis | Stent thrombosis | 6 months | NR | Stent thrombosis | NR | OR=1.112 | 1.041-1.188 | 0.002 | No | NR |  |
|  | 75 mg clopidogrel | VASP-PRI | Stent thrombosis | Stent thrombosis | 6 months | NR | Stent thrombosis | NR | OR=1.164 | 1.008-1.334 | 0.039 | Yes, variables with P<0.01 in the univariable analysis | NR |  |
| Siller-Matula, 2010{Siller-Matula, 2010 89 /id}  19943879  Austria  NR | Clopidogrel+aspirin | VASP | Definite stent thrombosis | Defined by ARC as ACS with angiographic or pathologic confirmation of thrombosis | Within 6 mo after stenting | Response vs. nonresponse to clopidogrel | Definite Stent thrombosis | NR | AUC, 0 .60 (SE 0.10)  ROC cutoff, 42%  Sensitivity 100% and specificity 37%; PPV 1%, NPV 100%; positive likelihood ratio,.1.6 | For AUC, 0.39-0.80 | 0.547 | NR | NR | NONE |
|  |  |  |  |  |  | Response to clopidogrel  N=145 | Definite Stent thrombosis | 0 | OR (calculated)= 4.00 | NR | P=0.36  (nonresponse vs response)  [Fisher’s exact test]] | NR | NR | Data also given for MEA+VASP in Fig 3 |
|  |  |  |  |  |  | Nonresponse to clopidogrel  N=257 |  | 3 |  |  |  |  |  | Data also given for MEA+VASP in Fig 3 |
| Siller-Matula, 2010{Siller-Matula, 2010 89 /id}  19943879  Austria  NR | Clopidogrel+aspirin | VASP | Composite of definite or probable stent thrombosis | Probable defined any unexplained death within 30 days or target vessel MI without angiographic conﬁrmation of thrombosis or other identiﬁed culprit lesion |  | Response vs. nonresponse to clopidogrel | Composite of definite or probable stent thrombosis | -- | AUC, 0 .53 (SE 0.94)  ROC cutoff, 23%  Sensitivity 100% and specificity 17%; PPV 2%, NPV 100%; positive likelihood ratio, 1.2 | For AUC, 0.34-0.71 | 0.811 | NR | NR | NONE |
|  |  |  |  |  |  | Response to clopidogrel  N=145 | Composite of definite or probable stent thrombosis | 2 | OR (calculated)=1.42 | 0.3-7.4 | P=0.68  (nonresponse vs response)  [Fisher’s exact test]] | NR | NR | Data also given for MEA+VASP in Fig 3 |
|  |  |  |  |  |  | Nonresponse to clopidogrel  N=257 |  | 5 | NR | NR | NR | NR | NR | Data also given for MEA+VASP in Fig 3 |
| Siller-Matula, 2010{Siller-Matula, 2010 89 /id}  19943879  Austria  NR | Clopidogrel+aspirin | VASP | Probable stent thrombosis | Probable stent thrombosis |  | Response to clopidogrel  N=145 | Probable stent thrombosis | 2 | OR (calculated)=0.56 | 0.1-4.0 | P=0.57  (nonresponse vs response)  [Fisher’s exact test]] | NR | NR | Data also given for MEA+VASP in Fig 3 |
|  |  |  |  |  |  | Nonresponse to clopidogrel  N=257 |  | 2 | NR | NR | NR | NR | NR | Data also given for MEA+VASP in Fig 3 |
| El Ghannudi, 2011{El, 2011 3 /id}  21524751  France  NR | Clopidogrel + aspirin | VASP | Stent thrombosis definite | Stent thrombosis definite | 9 months | non-diabetic responders (NDM-R) (PRI <61%) |  | 2 (2.1%) | OR=1 (calculated) | 0.5-2.0 | 0.09 across this and next 3 rows (log rank) |  |  |  |
|  |  |  |  |  |  | non-diabetic low responders (NDM-LR) (PRI≥61%) |  | 0 (0%) |  |  |  |  |  |  |
|  |  |  |  |  |  | diabetic responders (DM-R) (PRI<61%) |  | 3 (3.5%) |  |  |  |  |  |  |
|  |  |  |  |  |  | diabetic low responders (DM-LR) (PRI≥61%) |  | 3 (3.9%) |  |  |  |  |  |  |
|  |  |  | Stent thrombosis probable |  |  | non-diabetic responders (NDM-R) (PRI <61%) |  | 3 (3.2%) |  |  | 0.61 across this and next 3 rows (log rank) |  |  |  |
|  |  |  |  |  |  | non-diabetic low responders (NDM-LR) (PRI≥61%) |  | 2 (1.1%) |  |  |  |  |  |  |
|  |  |  |  |  |  | diabetic responders (DM-R) (PRI<61%) |  | 1 (1.2%) |  |  |  |  |  |  |
|  |  |  |  |  |  | diabetic low responders (DM-LR) (PRI≥61%) |  | 2 (2.6%) |  |  |  |  |  |  |
|  |  |  | Stent thrombosis possible |  |  | non-diabetic responders (NDM-R) (PRI <61%) |  | 0 (0%) |  |  | 0.0001 across this and next 3 rows (log rank) |  |  |  |
|  |  |  |  |  |  | non-diabetic low responders (NDM-LR) (PRI≥61%) |  | 0 (0%) |  |  |  |  |  |  |
|  |  |  |  |  |  | diabetic responders (DM-R) (PRI<61%) |  | 1 (1.2%) |  |  |  |  |  |  |
|  |  |  |  |  |  | diabetic low responders (DM-LR) (PRI≥61%) |  | 5 (6.6%) |  |  |  |  |  |  |
|  |  |  | Stent thrombosis any |  |  | non-diabetic responders (NDM-R) (PRI <61%) |  | 4 (4.2%) |  |  | 0.002 across this and next 3 rows (log rank) |  |  |  |
|  |  |  |  |  |  | non-diabetic low responders (NDM-LR) (PRI≥61%) |  | 3 (1.7%) |  |  |  |  |  |  |
|  |  |  |  |  |  | diabetic responders (DM-R) (PRI<61%) |  | 5 (5.9%) |  |  |  |  |  |  |
|  |  |  |  |  |  | diabetic low responders (DM-LR) (PRI≥61%) |  | 10 (13.3%) |  |  |  |  |  |  |
| El Ghannudi, 2010{El, 2010 74 /id}  20630458  France  NR | Clopidogrel LD 300 or 600mg | VASP | Definite stent thrombosis | Definite stent thrombosis | 9 months | Low responders  N=178 | Definite stent thrombosis | 5 (2.8%) | NR | NR | 0.49 (low responder vs responder)  [chi square] | NR | NR |  |
|  |  |  |  |  |  | Responders  N=275 |  | 4 (1.5%) |  |  |  |  |  |  |
|  | Clopidogrel LD 300 or 600mg l | VASP | Probable stent thrombosis | Probable stent thrombosis | 9 months | Low responders  N=178 | Probable stent thrombosis | 5 (2.8%) | NR | NR | 0.27 (low responder vs responder)  [chi square] | NR | NR |  |
|  |  |  |  |  |  | Responders  N=275 |  | 3 (1.1%) |  |  |  |  |  |  |
|  | Clopidogrel LD 300 or 600mg | VASP | Possible stent thrombosis | Possible stent thrombosis | 9 months | Low responders  N=178 | Possible stent thrombosis | 6 (3.3%) | NR | NR | 0.017 (low responder vs responder)  [chi square] | NR | NR |  |
|  |  |  |  |  |  | Responders  N=275 |  | 1 (0.4%) |  |  |  |  |  |  |
|  | Clopidogrel LD 300 or 600mg | VASP | All stent thrombosis | All stent thrombosis | 9 months | Low responders  N=178 | All stent thrombosis | 15 (8.3%) | NR | NR | 0.018 (low responder vs responder)  [chi square] | NR | NR |  |
|  |  |  |  |  |  | Responders  N=275 |  | 9 (3.3%) |  |  |  |  |  |  |
| Morel, 2011{Morel, 2011 187 /id}  21251579  France  NR | clopidogrel 300-600 mg LD | VASP | All stent thrombosis | According to the Academic Research Consortium criteria | mean 9±2 months | low responders (PRI≥ 61%) | All stent thrombosis | 15 (8.7%) | NR | NR | P=0.086  (low vs normal)  chi square | NO | NR | Secondary |
|  |  |  |  |  |  | normal responders (PRI<61%) |  | 8 (3.1%) |  |  |  |  |  |  |
|  | clopidogrel 300-600 mg LD | VASP | All stent thrombosis | According to the Academic Research Consortium criteria | mean 9±2 months | Quartile 1 (<40.30%) | All stent thrombosis | 1 (3%) | NR | NR | P=0.906  (low vs normal)  fishers exact | NO | NR | Secondary |
|  |  |  |  |  |  | Quartile 2 (40.30%–55.83%) |  | 1 (3.3%) |  |  |  |  |  |  |
|  |  |  |  |  |  | Quartile 3 (55.84%–70.25%) |  | 4 (12.6%) |  |  |  |  |  |  |
|  |  |  |  |  |  | Quartile 4 (>70.25%) |  | 6 (20.6%) |  |  |  |  |  |  |
|  | clopidogrel 300-600 mg LD | VASP | Definite stent thrombosis | acute coronary syndrome and angiographic or pathologic evidence of stent thrombosis | mean 9±2 months | low responders (PRI≥ 61%) | Definite stent thrombosis | 5 (2.9%) | NR | NR | P=0.494  (low vs normal)  chi square | NO | NR | Secondary |
|  |  |  |  |  |  | normal responders (PRI<61%) |  | 4 (1.5%) |  |  |  |  |  |  |
|  | clopidogrel 300-600 mg LD | VASP | Definite stent thrombosis | acute coronary syndrome and angiographic or pathologic evidence of stent thrombosis | mean 9±2 months | Quartile 1 (<40.30%) | Definite stent thrombosis | 1 (3%) | NR | NR | P=0.562  (low vs normal)  fishers exact | NO | NR | Secondary |
|  |  |  |  |  |  | Quartile 2 (40.30%–55.83%) |  | 0 |  |  |  |  |  |  |
|  |  |  |  |  |  | Quartile 3 (55.84%–70.25%) |  | 0 |  |  |  |  |  |  |
|  |  |  |  |  |  | Quartile 4 (>70.25%) |  | 1 (3.4%) |  |  |  |  |  |  |
|  | clopidogrel 300-600 mg LD | VASP | Probable stent thrombosis | unexplained death within 30 days or target vessel infarction without angiographic information | mean 9±2 months | low responders (PRI≥ 61%) | Probable stent thrombosis | 5 (2.9%) | NR | NR | P=0.275  (low vs normal)  chi square | NO | NR | Secondary |
|  |  |  |  |  |  | normal responders (PRI<61%) |  | 3 (1.2%) |  |  |  |  |  |  |
|  | clopidogrel 300-600 mg LD | VASP | Probable stent thrombosis | unexplained death within 30 days or target vessel infarction without angiographic information | mean 9±2 months | Quartile 1 (<40.30%) | Probable stent thrombosis | 0 | NR | NR | P=0.04  (low vs normal)  fishers exact | NO | NR | Secondary |
|  |  |  |  |  |  | Quartile 2 (40.30%–55.83%) |  | 1 (3.3%) |  |  |  |  |  |  |
|  |  |  |  |  |  | Quartile 3 (55.84%–70.25%) |  | 2 (6.3%) |  |  |  |  |  |  |
|  |  |  |  |  |  | Quartile 4 (>70.25%) |  | 2 (6.9%) |  |  |  |  |  |  |
|  | clopidogrel 300-600 mg LD | VASP | Possible stent thrombosis | unexplained death within 30 days or target vessel infarction without angiographic information | mean 9±2 months | low responders (PRI≥ 61%) | Possible stent thrombosis | 5 (2.9%) | NR | NR | P=0.110  (low vs normal)  chi square | NO | NR | Secondary |
|  |  |  |  |  |  | normal responders (PRI<61%) |  | 1 (0.4%) |  |  |  |  |  |  |
|  | clopidogrel 300-600 mg LD | VASP | Possible stent thrombosis | unexplained death within 30 days or target vessel infarction without angiographic information | mean 9±2 months | Quartile 1 (<40.30%) | Possible stent thrombosis | 0 | NR | NR | P=0.485  (low vs normal)  fishers exact | NO | NR | Secondary |
|  |  |  |  |  |  | Quartile 2 (40.30%–55.83%) |  | 0 |  |  |  |  |  |  |
|  |  |  |  |  |  | Quartile 3 (55.84%–70.25%) |  | 2 (6.3%) |  |  |  |  |  |  |
|  |  |  |  |  |  | Quartile 4 (>70.25%) |  | 3 (10.3%) |  |  |  |  |  |  |
| Schafer, 2011{Schafer, 2011 11 /id}  21655677  Germany  NR | Clopidogrel | VASP | stent thrombosis | stent thrombosis | 12 months | >57%  N=40 |  | 0 | OR (calculated)=0.35 | NR | P=0.61  (>57% vs ≤ 57%))  [Fisher’s exact] | NR | NR | NR |
|  |  |  |  |  |  | </=57%  N=14 |  | 0 | NR | NR | NR | NR | NR | NR |
| Gaglia, 2012{Gaglia, 2011 18244 /id}  21919956  USA  NR | LD: 600 mg loading clopidogrel or 75-mg for 5 days  MD: Aspirin + clopidogrel 75 mg for 1 month in patients with BMS and 12 months in patients receiving DES | VASP | stent thrombosis | stent thrombosis | 3 days | HPR with PRI>50%  n=79 | HPR | 0 | OR (calculated)=3.3 | NR | 0.6  (HPR vs NPR)  [Fishers exact test] | No | NR |  |
|  |  |  |  |  |  | NPR with PRI>50%  n=121 |  | 0 |  |  |  |  |  |  |