

Supplementary Materials

Predictive Value of HAS-BLED and HEMORR2HAGES Bleeding Risk Scores After Percutaneous Coronary Intervention

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Citation: *Tex Heart Inst J.* 2024;51(2):e238267. doi 10.14503/THIJ-23-8267

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Supplemental Table I: Incidence of criteria included in the HAS-BLED score.

HAS-BLED	Patients N (%)	No bleeding N=891	Any bleeding N=189	<i>P</i> <i>value</i>	No major bleeding N=1032	Bleeding BARC 3-5 N=48	<i>P</i> <i>value</i>
Hypertension >160mmHg	284 (26.3%)	229 (25.7%)	55 (29.1%)	0.34	266 (25.8%)	18 (37.5%)	0.07
Renal failure (Cr>221 µmol/L or chronic dialysis or transplantation)	18 (1.7%)	11 (1.2%)	7 (3.7%)	0.02	17 (1.6%)	1 (2.1%)	0.82
Liver disease (cirrhosis or bilirubin>2x normal or ASAT/ALAT>3x normal)	48 (4.4%)	38 (4.3%)	10 (5.3%)	0.53	45 (4.4%)	3 (6.3%)	0.55
Stroke history	54 (5%)	45 (5.1%)	9 (4.8%)	0.87	52 (5.0%)	2 (4.2%)	0.79
Prior major bleeding or predisposition to bleeding (anemia)	205 (19%)	150 (16.8%)	55 (29.1%)	<0.01	180 (17.4%)	25 (52%)	<0.01
Labile INR: unstable/high, time in therapeutic range <60%	8 (0.7%)	8 (0.9%)	0 (0%)	0.54	8 (0.8%)	0 (0%)	0.54
Age >65 yr	609 (56.4%)	476 (53.4%)	133 (70.4%)	<0.01	569 (55.1%)	40 (83%)	<0.01
Medication: NSAID, antiplatelet, ASA	1080 (100%)	891 (100%)	189 (100%)	<i>n/a</i>	1032 (100%)	48 (100%)	<i>n/a</i>
Alcohol (>8 drinks/week)	104 (9.6%)	79 (8.8%)	25 (13.2%)	0.07	95 (9.2%)	9 (18.8%)	0.03

P value of <0.05 was considered statistically significant.

Abbreviations: ASA = aspirin; ASAT = aspartate aminotransferase; ALAT = alanine aminotransferase; Cr = creatinine; INR = International Normalized Ratio; NSAID = nonsteroidal anti-inflammatory drug

Supplemental Table II: Incidence of criteria included in the HEMORR2HAGES score.

HEMORR2HAGES	Patients N (%)	No bleeding N=891	Any bleeding N=189	<i>P</i> <i>value</i>	No major bleeding N=1032	Bleeding BARC 3- 5 N=48	<i>P</i> <i>value</i>
Hepatic or renal disease (liver failure or cirrhosis or end-stage renal disease or Cr>221 µmol/L)	20 (1.9%)	10 (1.1%)	10 (5.3%)	<0.01	17 (1.6%)	3 (6.3%)	0.02
Alcohol abuse	104 (9.6%)	79 (8.9%)	25 (13.2%)	0.07	95 (9.2%)	9 (18.8%)	0.03
Malignancy history	163 (15.1%)	118 (13.2%)	45 (23.8%)	<0.01	150 (14.5%)	13 (27.1%)	0.02
Age >75 yr	255 (23.6%)	186 (20.9%)	69 (36.5%)	<0.01	230 (22.3%)	25 (52.1%)	<0.01
Reduced platelet count or function: includes aspirin use, thrombocytopenia or blood dyscrasia like hemophilia	1072 (99.3%)	886 (99.4%)	186 (98.4%)	0.14	1025 (99.3%)	47 (97.9%)	0.27
Prior bleeding	11 (1%)	6 (0.7%)	5 (2.6%)	0.01	8 (0.8%)	3 (6.3%)	<0.01
High blood pressure (uncontrolled)	183 (16.9%)	149 (16.8%)	34 (18.0%)	0.68	172 (16.7%)	11 (22.9%)	0.26
Anemia: Hb <12 g/dL in men, <11 g/dL in women	92 (8.5%)	61 (6.8%)	31 (16.4%)	<0.01	72 (6.9%)	20 (41.7%)	<0.01
Genetic factors: CYP 2C9 SNP	0 (0%)	0 (0%)	0 (0%)	<i>n/a</i>	0 (0%)	0 (0%)	<i>n/a</i>
High fall risk	65 (6%)	41 (4.6%)	24 (12.7%)	<0.01	54 (5.2%)	11 (22.9%)	<0.01
Stroke history	54 (5%)	45 (5.1%)	9 (4.8%)	0.87	52 (5.0%)	2 (4.2%)	0.79

P value of <0.05 was considered statistically significant.

Abbreviations: Cr =creatinine; CYP = cytochrome P; SNP = single nucleotide polymorphism

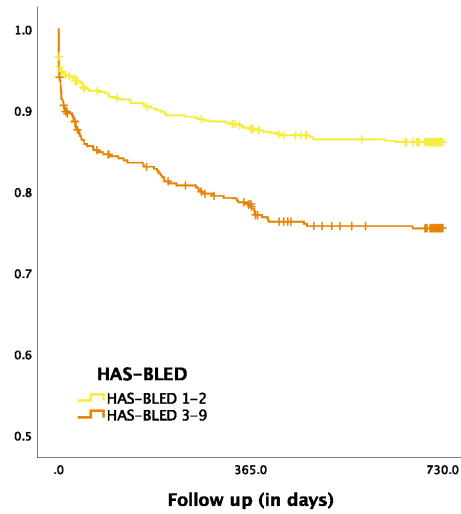
Supplemental Table III: Incidence of criteria included in the PARIS score.

PARIS	Patients N (%)	No bleeding N=891	Any bleeding N=189	<i>P</i> value	No major bleeding N=1032	Bleeding BARC 3-5 N=48	<i>P</i> value
Age (yr)				<0.01			<0.01
<50 – 0 pt	93 (8.6%)	82 (9.2%)	11 (5.8%)		93 (9.0%)	0 (0%)	
50-59 – 1 pt	209 (19.4%)	186 (20.9%)	23 (12.2%)		206 (20.0%)	3 (6.3%)	
60-69 – 2 pts	310 (28.7%)	262 (29.4%)	48 (25.4%)		303 (29.3%)	7 (14.6%)	
70-79 – 3 pts	320 (29.6%)	250 (28.1%)	70 (37.0%)		298 (28.9%)	22 (45.9%)	
>79 – 4 pts	148 (13.7%)	111 (12.5%)	37 (19.6%)		132 (12.8%)	16 (33.4%)	
BMI <25 or >34.9 kg/m ²	405 (37.5%)	324 (36.4%)	81 (42.9%)	0.09	388 (37.6%)	17 (35.4%)	0.76
Current smoking	305 (28.2%)	265 (29.7%)	40 (21.2%)	0.02	297 (28.8%)	8 (16.7%)	0.07
Anemia: Hb <12 g/dL in men, <11 g/dL in women	92 (8.5%)	61 (6.8%)	31 (16.4%)	<0.01	72 (7.0%)	20 (41.7%)	<0.01
CrCl <60 ml/min	238 (22%)	167 (18.7%)	71 (37.0%)	<0.01	215 (20.8%)	23 (47.9%)	<0.01
Triple therapy	123 (11.4%)	97 (10.9%)	26 (13.8%)	0.26	113 (10.9%)	10 (20.8%)	0.04

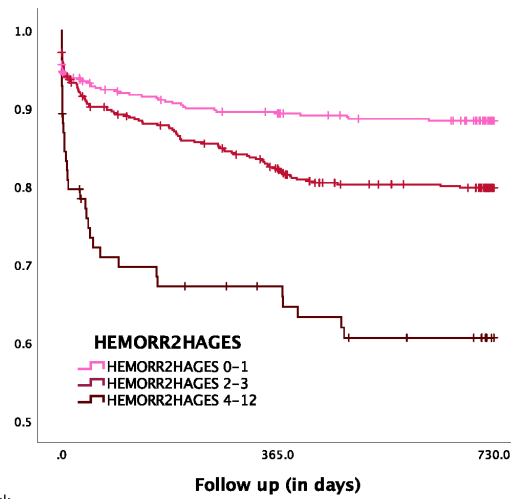
P value of <0.05 was considered statistically significant.

Abbreviations: BMI = body mass index; CrCl = creatinine clearance

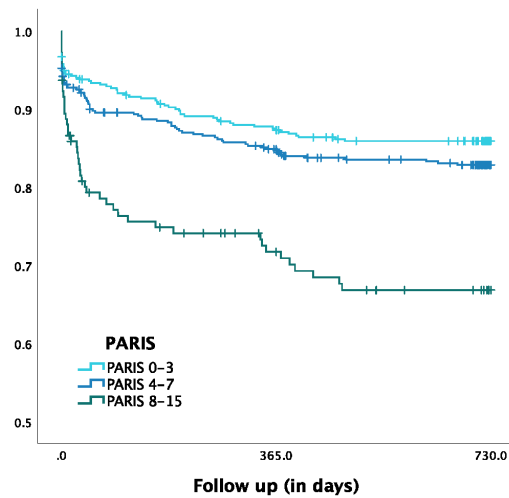
Any Bleeding Event-free Survival



Number at risk			
HAS-BLED 1-2	675	573	471
HAS-BLED 3-9	405	300	248



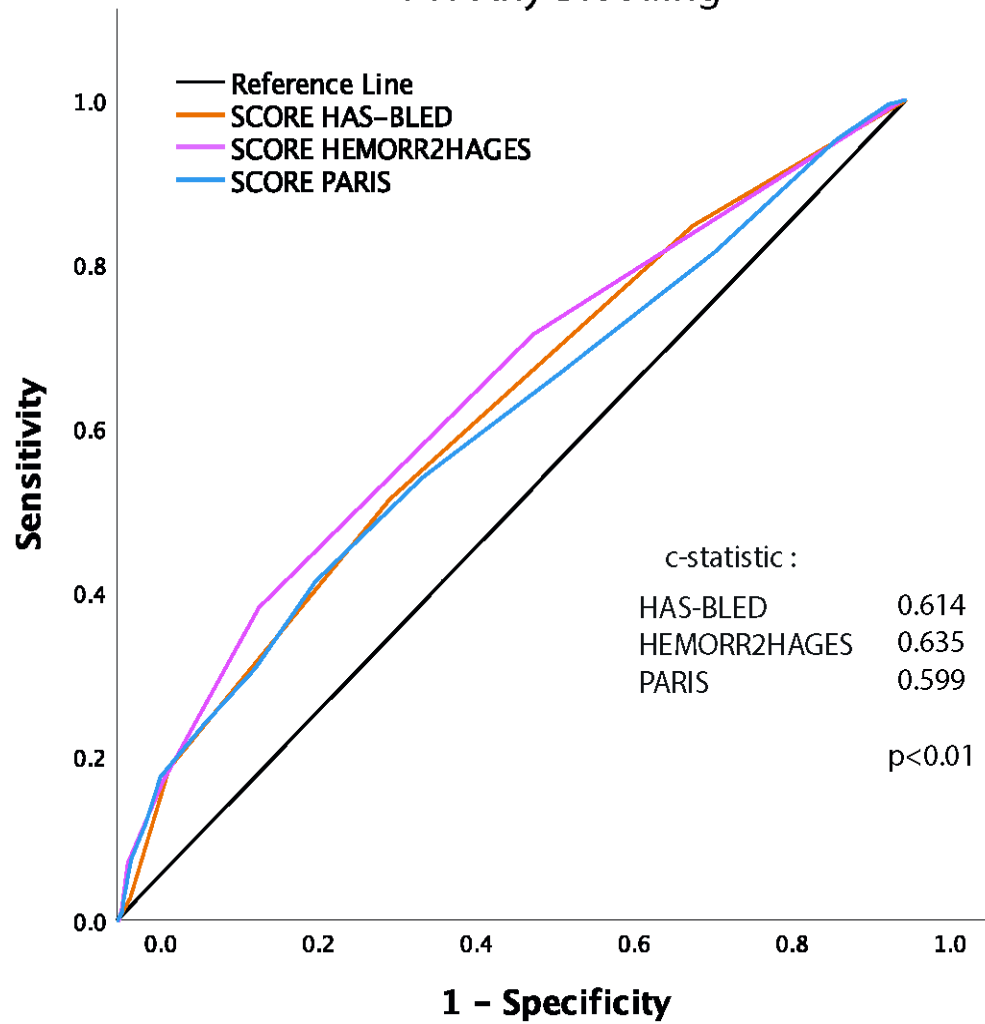
Number at risk			
HEMORR2HAGES 0-1	475	409	338
HEMORR2HAGES 2-3	521	413	343
HEMORR2HAGES 4-12	84	51	38



Number at risk			
PARIS 0-3	454	389	329
PARIS 4-7	483	394	317
PARIS 8-15	143	90	73

Supplemental Figure 1: Kaplan-Meier Estimates of Any Bleeding-Free Survival at 2-year Follow-up, for A) HAS-BLED, B) HEMORR2HAGES, and C) PARIS scores.

Area under the ROC Curve For Any Bleeding



Supplemental Figure 2: Area under the receiver operating characteristic (ROC) curve for Any Bleeding.