Evénements Ischémiques et Hémorragiques lors d'un Syndrome Coronarien Aigu : l'Approche Radiale

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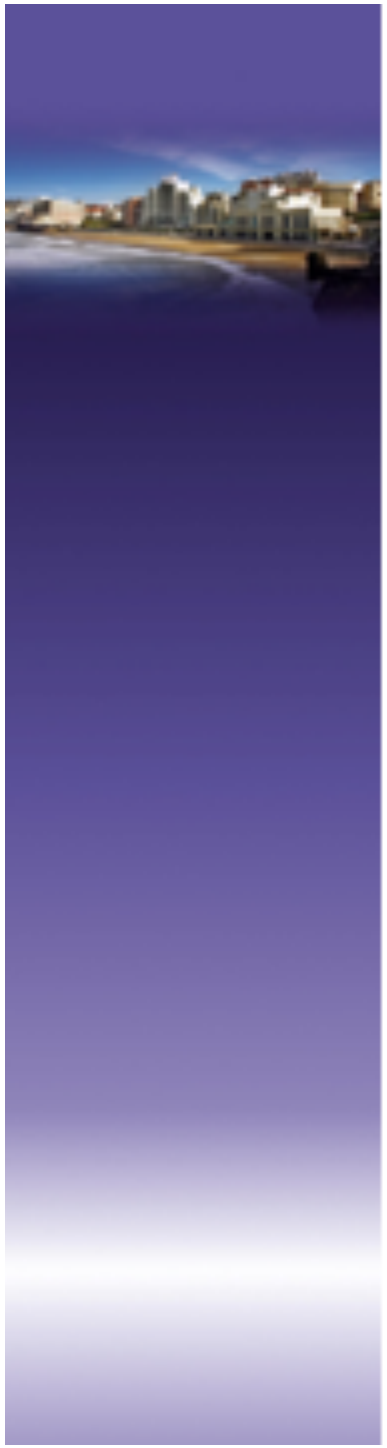


APPAC 14ème EDITION

Actualisations et Perspectives en PAthologie Cardiovasculaire

Michael Angioi

déclare n'avoir aucun conflit d'intérêt concernant les données de sa communication

Risque hémorragique et mortalité dans l'angioplastie

Mortality in patients with or without major bleeding with risk difference and numbers needed to harm

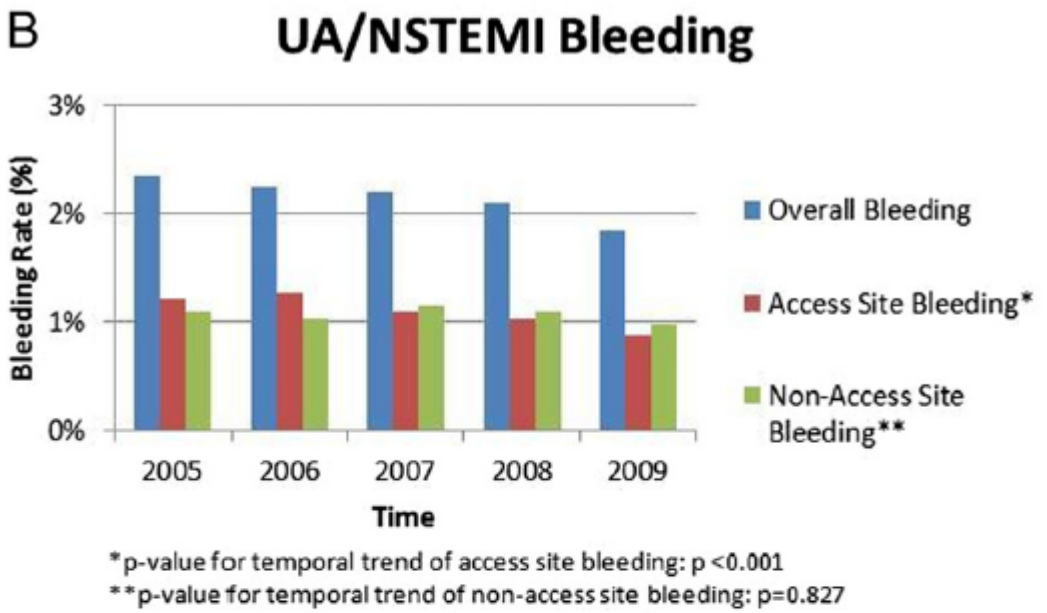
	Major Bleeding (Deaths/Patients)	No Major Bleeding (Deaths/Patients)	Risk Difference (Random) (95% CI)	Number Needed To Harm (95% CI)
Ali et al[19] (2004)	9/89	24/931	0.08 (0.01–0.14)	12.5 (7.14–100)
Eikelboom et al[20] (2006)	60/470	833/33,676	0.10 (0.07–0.13)	10.0 (7.7–14.3)
Feit et al[21] (2007)	10/194	9/5,807	0.05 (0.02–0.08)	20.0 (12.5–50)
Kinnaird et al[11] (2003)	44/588	54/8,992	0.07 (0.05–0.09)	14.3 (11.1–20)
Lenderink et al[22] (2004)	18/98	120/7,702	0.17 (0.09–0.24)	5.9 (4.2–11.1)
Manoukian et al[14] (2007)	47/644	159/13,175	0.06 (0.04–0.08)	16.7 (12.5–25)
Moscucci et al[2] (2003)	85/546	624/15,348	0.12 (0.08–0.15)	8.3 (6.7–12.5)
Rao et al[23] (2005)	79/307	549/19,110	0.23 (0.18–0.28)	4.3 (3.6–5.5)
Segev et al[3] (2005)	15/79	86/5,763	0.17 (0.09–0.26)	5.9 (3.8–11.1)
Yusuf et al[18] (2006)	83/629	545/19,449	0.10 (0.08–0.13)	10.0 (7.7–12.5)
Total (95% CI)	450/3644	3003/129,953	0.11 (0.08–0.14)	9.1 (7.1–12.5)

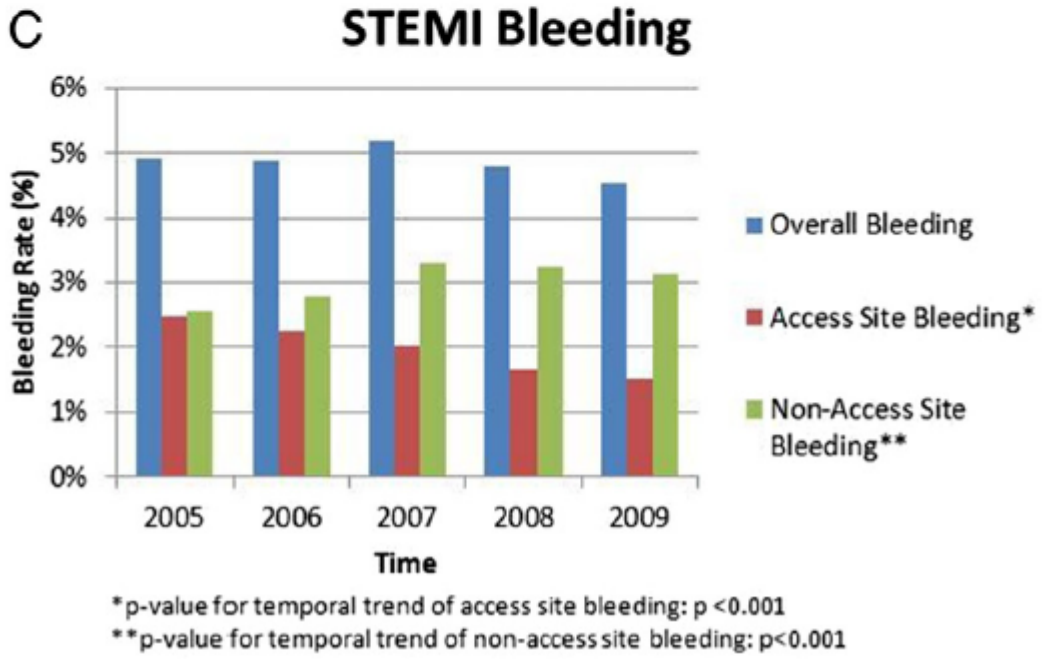
12,3% 2,3%

Hamon M et al Am J Cardiol ;2009:104(Suppl):55C-59C

Evolution des saignements dans le NC data cathPCI registry

Elective 599 524
UA/NSTEMI 836 103
STEMI 267632





Subherwal S et al J Am Coll Cardiol 2012;59:1816-9.

Facteurs de risques d'hémorragies : cibles préventives potentielles

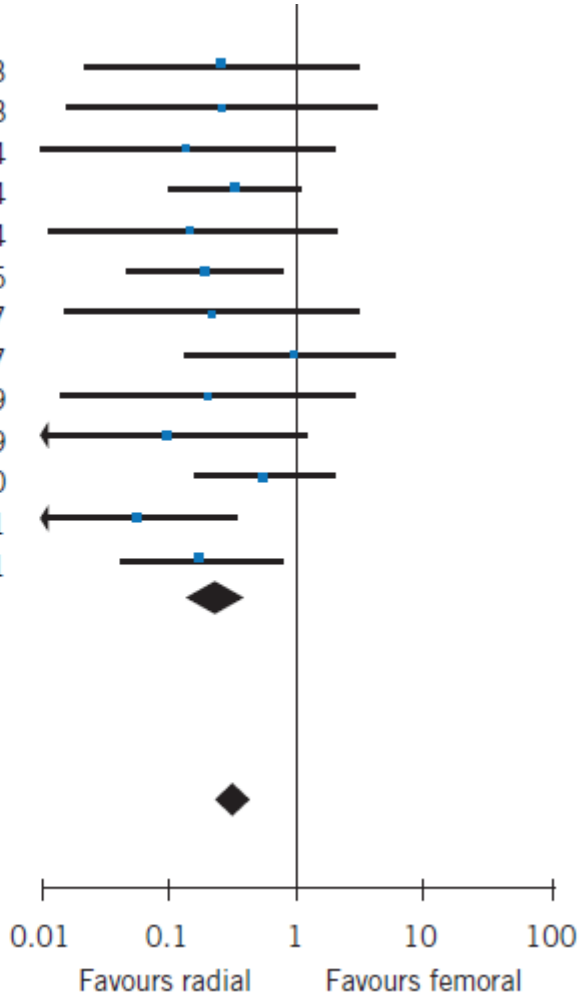
Risk factors for bleeding

Patient Level	Procedural Level	Pharmacologic Level
• Female sex	• Femoral access	• Over-anticoagulation
• Older age	• Larger arterial sheath	• LMWH within 48 hours before PCI
• Hypertension	• Prolonged sheath time	• GP IIb/IIIa inhibitors use
• Obesity or low weight	• IABP placement	• Thrombolytic therapy
• Renal impairment	• Concomitant venous sheath	• Heparin use after procedure
• Platelet low count, anemia	• Need for staged procedures	
• Medical history (GI disease)		

Hamon M et al Am J Cardiol ;2009:104(Suppl):55C-59C

- ✓ Nombreuses méta-analyses sur l'utilisation de la voie radiale dans le STEMI
  - ✓ *Vorobcsuk A et al Am Heart J;2009:158:814-21.*
  - ✓ *Jang JS et al EuroIntervention 2012;may: online*
  - ✓ *Mamas MA et al Heart 2012;98:303-11.*
- ✓ Résultats concordants
- ✓ Beaucoup moins sur le NSTEMI
- ✓ Pas d'études spécifiques interactions antithrombotiques-voie d'abord

Risque de saignement et voie d'abord (STEMI)

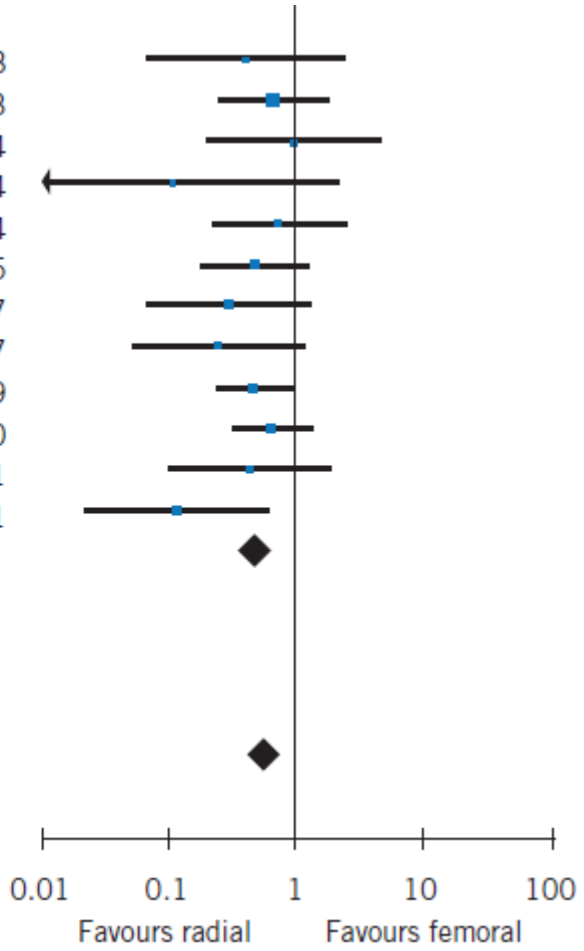


1.4.2. Non-randomised studies							
Valsecchi O	0	163	7	563	3.3%	0.23 [0.01, 3.99]	2003
Zikas A	0	100	1	67	1.7%	0.22 [0.01, 5.50]	2003
Diaz de la Llera LS	0	103	2	59	3.1%	0.11 [0.01, 2.35]	2004
Kassam S	3	47	12	64	9.3%	0.30 [0.08, 1.11]	2004
Philippe F	0	64	3	55	3.6%	0.12 [0.01, 2.30]	2004
Kim JY	2	220	7	132	8.5%	0.16 [0.03, 0.80]	2005
Zikas A[2]	0	187	2	168	2.6%	0.18 [0.01, 3.73]	2007
Cruden NL	1	44	6	243	1.8%	0.92 [0.11, 7.82]	2007
Hetheringlon SL	0	571	2	480	2.6%	0.17 [0.01, 3.50]	2009
Yip HK	0	506	10	810	7.9%	0.08 [0.00, 1.29]	2009
EUROTRANSFER	2	169	20	917	6.0%	0.54 [0.12, 2.32]	2010
Jen	1	85	9	37	12.1%	0.04 [0.00, 0.31]	2011
Deftereos S	2	65	6	33	7.5%	0.14 [0.03, 0.75]	2011
Subtotal (95% CI)		**2324**		**3628**	**69.9%**	**0.20 [0.11, 0.35]**	
Total events	11		87				
Heterogeneity: Chi²=7.47, df=12 (P=0.83); I²=0%							
Test for overall effect: Z=5.49 (P<0.00001)							
Total (95% CI)		**3694**		**5040**	**100.0%**	**0.32 [0.22, 0.48]**	
Total events	29		118				
Heterogeneity: Chi²=18.25, df=19 (P=0.51), I²=0%							
Test for overall effect: Z=5.65 (P<0.0001)							
Test for subgroup differences: Chi²=7.37, df=1 (P=0.007), I²=86.4%							

Jang JS et al EuroIntervention 2012;may: ahead of print

Risque d'événements et voie d'abord (STEMI)

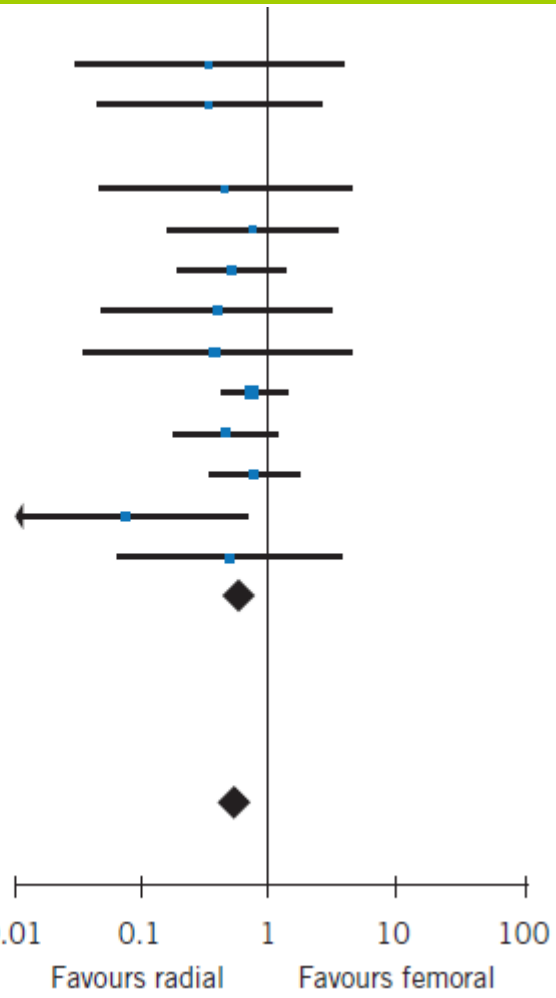
1.1.2. Non-randomised studies							
Zikas A	2	100	3	67	1.9%	0.44 [0.07, 2.68]	2003
Valsecchi O	5	163	24	563	5.8%	0.71 [0.27, 1.89]	2003
Kassam S	3	47	4	64	1.7%	1.02 [0.22, 4.80]	2004
Philippe F	0	64	3	55	2.1%	0.12 [0.01, 2.30]	2004
Diaz de la Llera LS	7	103	5	59	3.3%	0.79 [0.24, 2.60]	2004
Kim JY	8	220	9	132	6.0%	0.52 [0.19, 1.37]	2005
Cruden NL	2	44	32	243	5.2%	0.31 [0.07, 1.36]	2007
Zikas A[2]	3	187	4	68	3.2%	0.26 [0.06, 1.20]	2007
Hetheringlon SL	15	571	25	480	14.6%	0.49 [0.26, 0.94]	2009
EUROTRANSFER	9	169	68	917	11.0%	0.70 [0.34, 1.44]	2010
Deftereos S	4	65	4	33	2.7%	0.48 [0.11, 2.04]	2011
Jen	2	85	6	37	4.5%	0.12 [0.02, 0.65]	2011
Subtotal (95% CI)		**1818**		**2718**	**61.9%**	**0.51 [0.37, 0.71]**	
Total events	60		187				
Heterogeneity: Chi^2=7.44, df=11 (P=0.76); I^2=0%							
Test for overall effect: Z=4.05 (P<0.0001)							
Total (95% CI)		**3188**		**4130**	**100.0%**	**0.56 [0.44, 0.72]**	
Total events	106		259				
Heterogeneity: Chi^2=9.42, df=19 (P=0.97), I^2=0%							
Test for overall effect: Z=4.64 (P<0.00001)							
Test for subgroup differences: Chi^2=0.72, df=1 (P=0.40), I^2=0%							



Jang JS et al EuroIntervention 2012;may: ahead of print

Risque de mortalité et voie d'abord (STEMI)

1.3.2. Non-randomised studies							
Zikas A	1	100	3	67	1.9%	0.44 [0.07, 2.68]	2003
Valsecchi O	1	163	24	563	5.8%	0.71 [0.27, 1.89]	2003
Philippe F	0	64	3	55	2.1%	0.12 [0.01, 2.30]	2004
Kassam S	1	47	4	64	1.7%	1.02 [0.22, 4.80]	2004
Diaz de la Llera LS	4	103	5	59	3.3%	0.79 [0.24, 2.60]	2004
Kim JY	8	220	9	132	6.0%	0.52 [0.19, 1.37]	2005
Cruden NL	1	44	32	243	5.2%	0.31 [0.07, 1.36]	2007
Zikas A[z]	1	187	4	68	3.2%	0.26 [0.06, 1.20]	2007
Yip HK	19	506	40	810	20.0%	0.75 [0.43, 1.31]	2009
Hetheringlon SL	19	571	25	480	14.6%	0.49 [0.26, 0.94]	2009
EUROTRANSFER	7	169	68	917	11.0%	0.70 [0.34, 1.44]	2010
Deftereos S	1	65	4	33	2.7%	0.48 [0.11, 2.04]	2011
Jen	2	85	6	37	4.5%	0.12 [0.02, 0.65]	2011
Subtotal (95% CI)		**2224**		**3528**	**65.9%**	**0.57 [0.41, 0.80]**	
Total events	53		151				
Heterogeneity: Chi²=5.98, df=11 (P=0.87); I²=0%							
Test for overall effect: Z=3.28 (P=0.0001)							
Total (95% CI)		**3594**		**4940**	**100.0%**	**0.55 [0.42, 0.72]**	
Total events	79		202				
Heterogeneity: Chi²=8.37, df=18 (P=0.97), I²=0%							
Test for overall effect: Z=4.29 (P<0.0001)							
Test for subgroup differences: Chi²=0.16, df=1 (P=0.69), I²=0%							



Jang JS et al EuroIntervention 2012;may: ahead of print

Impact sur le déroulement de l'angioplastie

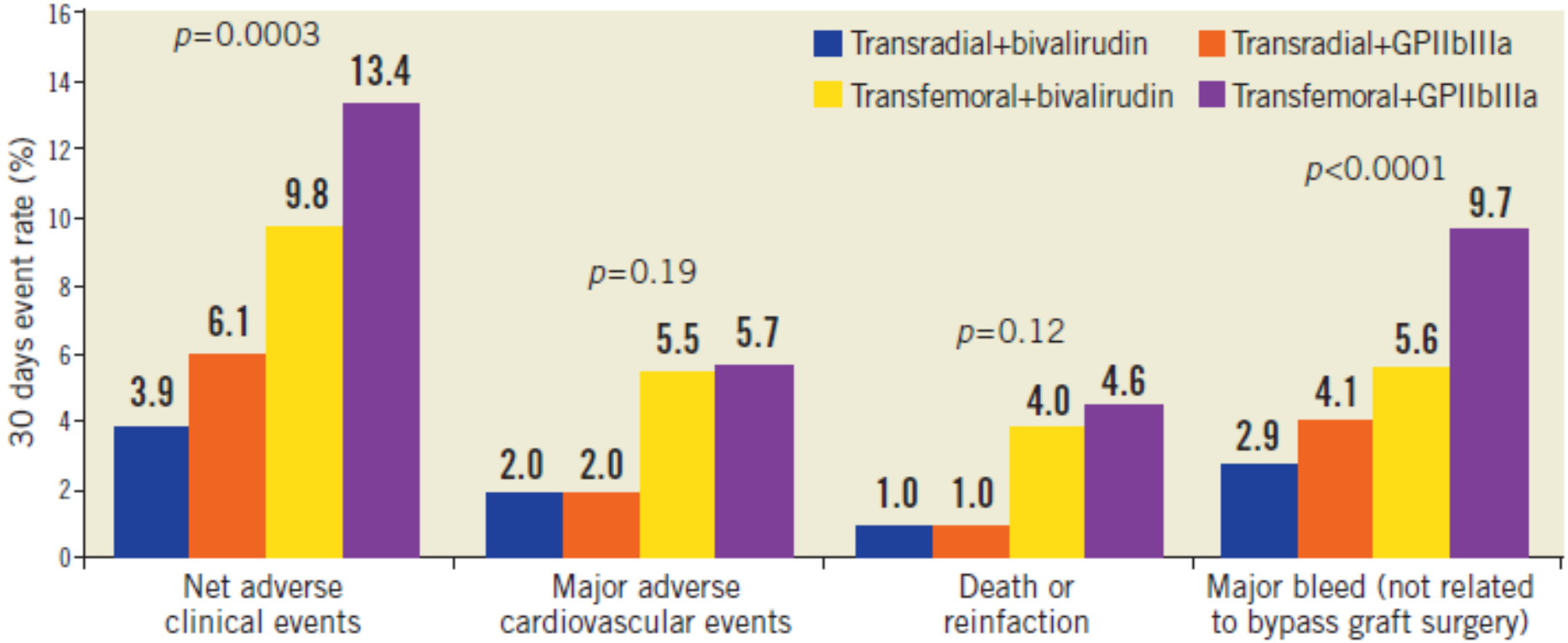
Table 2. Summary of outcomes of secondary endpoints.

Outcomes	Trials	Summary estimate (95% CI)	Test for overall effect	Heterogeneity analysis
Hospital stay	8	–2.23 (–3.32, –1.14)	Z=4.0 (p<0.001)	χ^2=128.59, df=7 (p<0.001), I^2=95%
Fluoroscopic time	6	1.26 (–017, 2.70)	Z=1.72 (p=0.09)	χ^2=17.18, df=5 (p=0.004), I^2=71%
Door-to-balloon time	8	2.28 (–2.79, 7.34)	Z=0.88 (p=0.38)	χ^2=45.20, df=7 (p<0.001), I^2=85%
Procedure time	6	–0.70 (–6.56, 5.17)	Z=0.23 (p=0.82)	χ^2=63.01, df=5 (p<0.001), I^2=92%
Access site crossover	4	3.50 (0.97, 12.63)	Z=1.91 (p=0.06)	χ^2=2.88, df=3 (p=0.41), I^2=0%

Summary estimate indicate mean difference for hospital stay, fluoroscopic time, door-to-balloon time, and procedure time, odds ratio for access site crossover. CI: confidence interval.

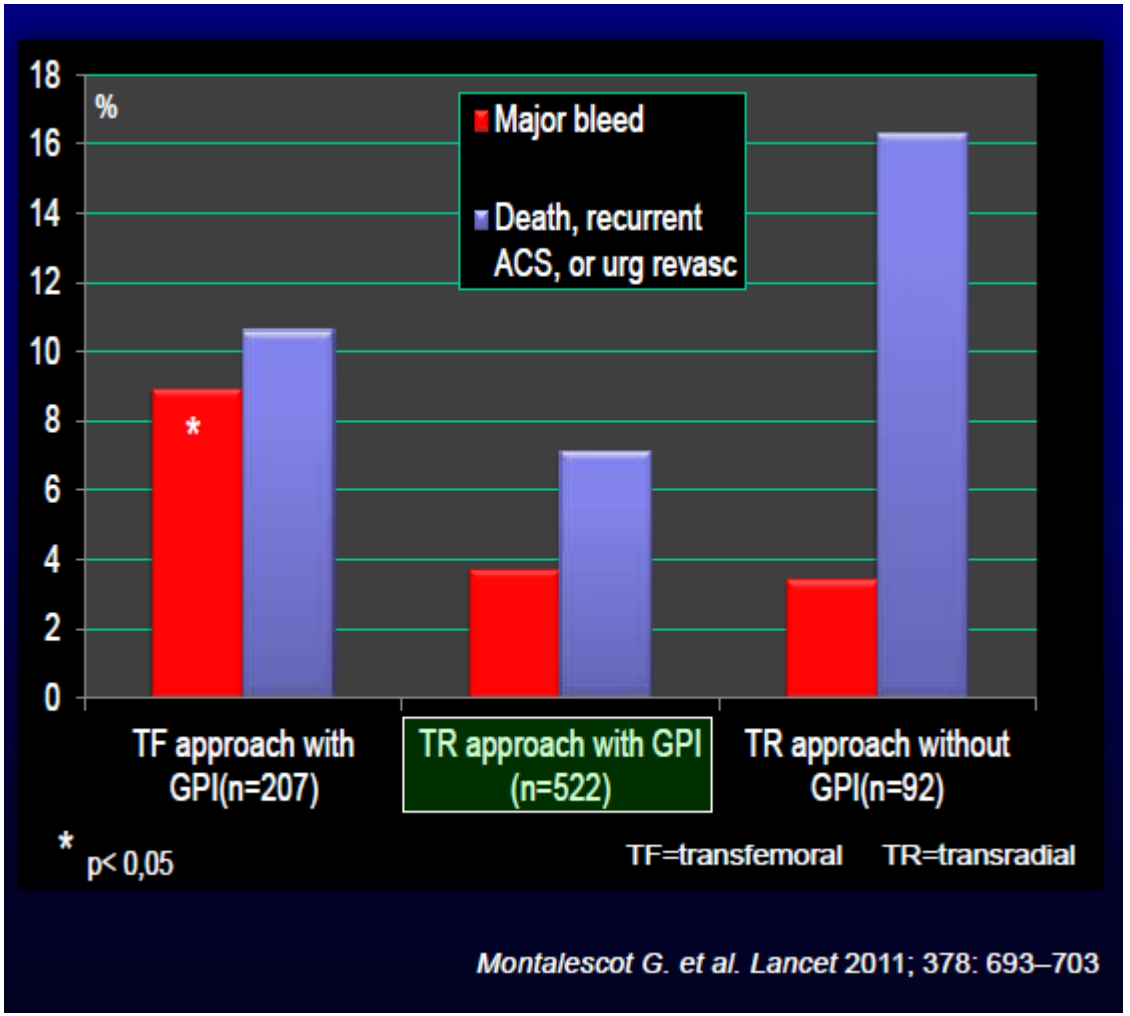
Jang JS et al EuroIntervention 2012;may: ahead of print

Interaction voie d'abord antithrombotiques : étude HORIZONS



Généreux P et al EuroIntervention;2011:7:905-16

Interaction voie d'abord antithrombotiques : étude ATOLL



Impact pronostique d'un saignement chez les patients avec abord radial

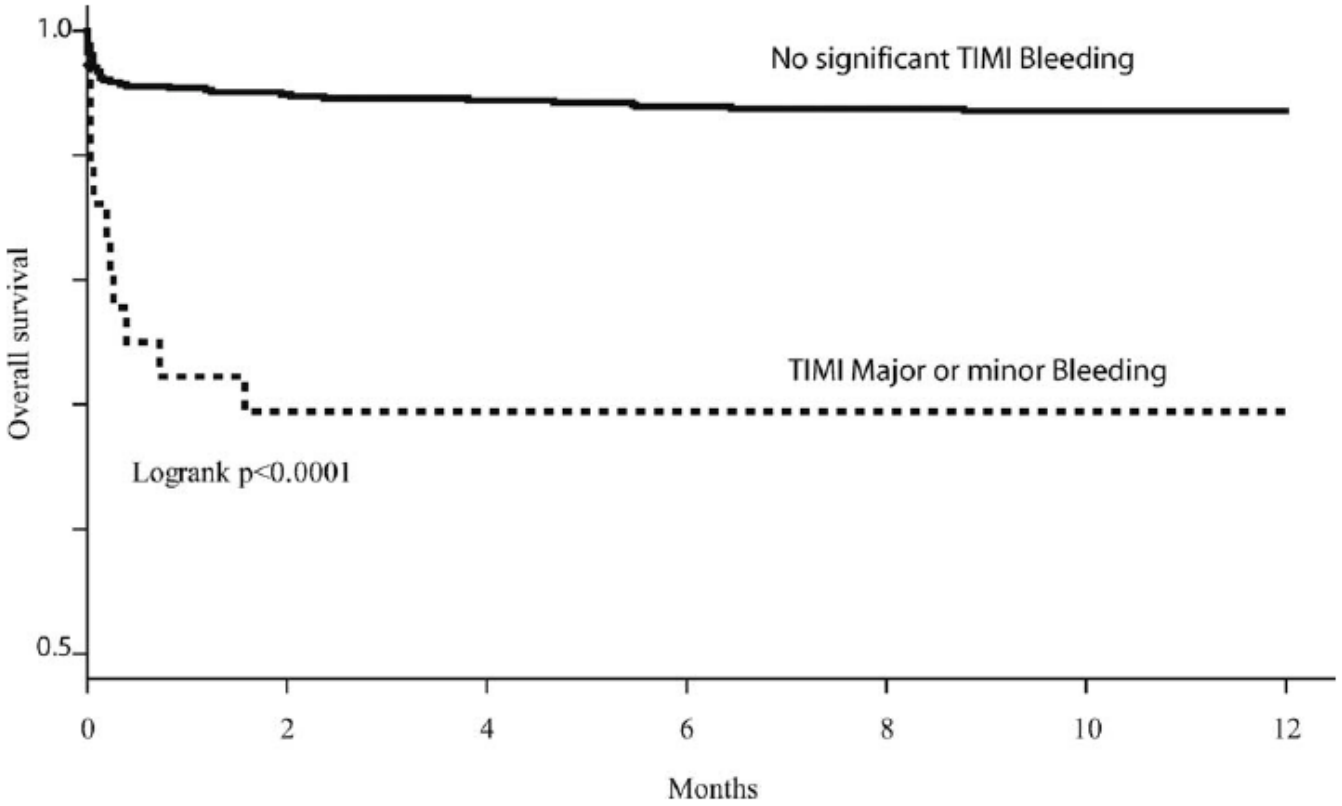
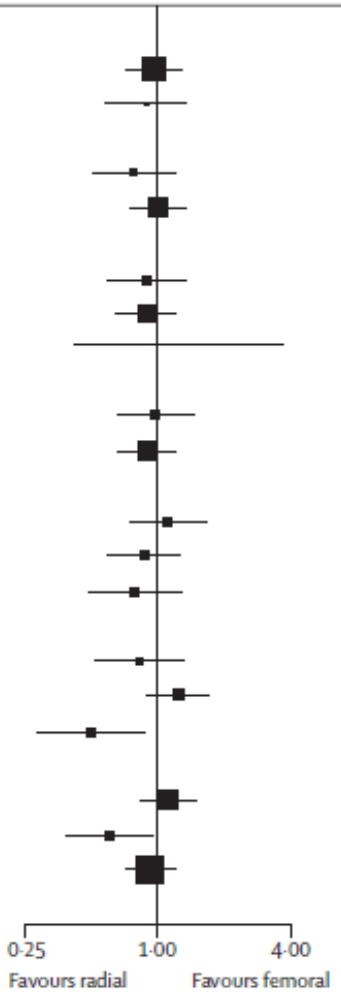


Fig. 3. One-year Kaplan–Meier unadjusted survival curves according to the occurrence of in-hospital TIMI Major or minor bleeding.

Barthélémy O et al Cathet Cardiovasc Interv 2012;9:104-2)

Etude RIVAL : effet volume sur les résultats

	Total	Radial (n/N [%])	Femoral (n/N [%])	HR (95% CI)	Primary outcome p value	Interaction p value
Age (years)						
<75	5986	87/3001 (2·9)	91/2985 (3·0)	0·95 (0·71–1·27)	0·73	0·79
≥75	1035	41/506 (8·1)	48/529 (9·1)	0·89 (0·58–1·34)	0·57	
Sex						
Women	1861	36/908 (4·0)	48/953 (5·0)	0·78 (0·50–1·20)	0·25	0·36
Men	5160	92/2599 (3·5)	91/2561 (3·6)	0·99 (0·74–1·33)	0·97	
BMI (kg/m²)						
<25	2152	44/1067 (4·1)	50/1085 (4·6)	0·89 (0·59–1·33)	0·57	
25–35	4386	73/2205 (3·3)	82/2181 (3·8)	0·88 (0·64–1·20)	0·42	0·83
>35	454	7/219 (3·2)	6/235 (2·6)	1·24 (0·42–3·70)	0·70	
PCI in hospital						
No	2361	49/1196 (4·1)	49/1165 (4·2)	0·97 (0·65–1·44)	0·89	0·72
Yes	4660	79/2311 (3·4)	90/2349 (3·8)	0·89 (0·66–1·20)	0·45	
Radial PCI volume by operator						
≤70	2363	49/1164 (4·2)	46/1199 (3·8)	1·10 (0·74–1·65)	0·63	
71–142	2315	50/1158 (4·3)	57/1157 (4·9)	0·87 (0·60–1·27)	0·48	0·54
>142	2326	29/1182 (2·4)	36/1154 (3·1)	0·79 (0·48–1·28)	0·33	
Radial PCI volume by centre						
Lowest tertile	1920	33/958 (3·4)	40/962 (4·2)	0·83 (0·52–1·31)	0·42	
Middle tertile	2846	77/1420 (5·4)	63/1426 (4·4)	1·23 (0·88–1·72)	0·22	0·021
Highest tertile	2255	18/1129 (1·6)	36/1126 (3·2)	0·49 (0·28–0·87)	0·015	
Clinical diagnosis						
NSTE-ACS	5063	98/2552 (3·8)	87/2511 (3·5)	1·11 (0·83–1·48)	0·49	0·025
STEMI	1958	30/955 (3·1)	52/1003 (5·2)	0·60 (0·38–0·94)	0·026	
Overall	**7021**	**128/3507 (3·7)**	**139/3514 (4·0)**	**0·92 (0·72–1·17)**	**0·50**	



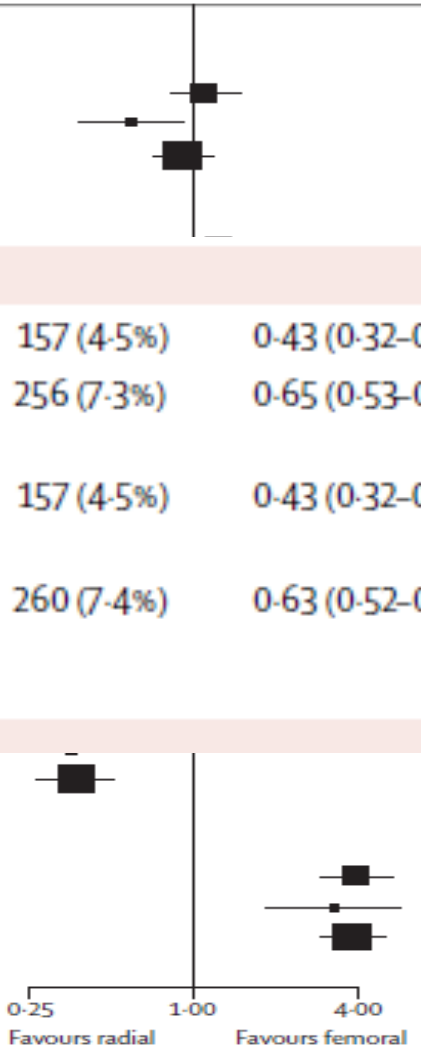
Jolly SS et al Lancet 2011 377 : 1409-20.

Analyse des événements chez les patients avec un SCA : différences STEMI/NSTEMI

	Total	Radial (n/N [%])	Femoral (n/N [%])	HR (95% CI)	p value	Interaction p value
Primary outcome						
Clinical diagnosis						
NSTE-ACS	5063	98/2552 (3·8)	87/2511 (3·5)	1·11 (0·83–1·48)	0·49	
STEMI	1958	30/955 (3·1)	52/1003 (5·2)	0·60 (0·38–0·94)	0·026	0·025
Overall	**7021**	**128/3507 (3·7)**	**139/3514 (4·0)**	**0·92 (0·72–1·17)**	**0·50**	
Death, MI, or stroke						
Clinical diagnosis						
NSTE-ACS						
STEMI						
Overall						
Death						
Clinical diagnosis						
NSTE-ACS						
STEMI						
Overall						
Non-CABG major bleed						
Clinical diagnosis						
NSTE-ACS						
STEMI						
Overall						
Major vascular complicatio						
Clinical diagnosis						
NSTE-ACS						
STEMI						
Overall	**7021**	**49/3507 (1·4)**	**131/3514 (3·7)**	**0·37 (0·27–0·52)**	**<0·0001**	
Access site crossover						
Clinical diagnosis						
NSTE-ACS	5063	214/2552 (8·4)	54/2511 (2·2)	3·94 (2·92–5·31)	<0·0001	
STEMI	1958	51/955 (5·3)	16/1003 (1·6)	3·32 (1·89–5·82)	<0·0001	0·61
Overall	**7021**	**265/3507 (7·6)**	**70/3514 (2·0)**	**3·82 (2·93–4·97)**	**<0·0001**	

Post-hoc exploratory outcomes

ACUITY major bleeding†	66 (1·9%)	157 (4·5%)	0·43 (0·32–0·57)	<0·0001
Death, MI, or stroke, or ACUITY major bleed†	167 (4·8%)	256 (7·3%)	0·65 (0·53–0·78)	<0·0001
Non-CABG major bleeding and major vascular complications	67 (1·9%)	157 (4·5%)	0·43 (0·32–0·57)	<0·0001
Death, MI, stroke, non-CABG major bleeding, or major vascular complications	167 (4·8%)	260 (7·4%)	0·63 (0·52–0·77)	<0·0001



Conclusions

- ✓ Les événements hémorragiques sont un facteur de mortalité important lors de l'angioplastie coronaire
- ✓ La voie radiale permet de diminuer à la fois l'incidence des événements hémorragiques et de diminuer les événements majeurs et la mortalité dans les SCAs (STEMI)
- ✓ Les événements hémorragiques demeurent un facteur prédictif de mortalité même par voie radiale
- ✓ Effet volume/résultats