

Reunião conjunta da SPNC e SENC



why we should go
on clipping
aneurysms



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Life After ISAT

- paradigm shift in many Centers

in spite of

- methodology issues
- out of context interpretation

Objectives

- review our series results
 - general group
 - equivalent group (with ISAT)
- compare with both ISAT groups
 - surgical
 - endovascular

Methods

Patients

- retrospective analysis
- ruptured saccular aneurisms
- 8 year period (2000-2007)
- n= 319 (consecutive, non-selected)

Data

- WFNS
- Fisher scale (CT)
- age, gender
- aneurysm location, number, size
- complications
- Glasgow Outcome Scale

Comparison with ISAT groups

- general group
- “equivalent” group
- to match ISAT initial group

Original (n=319)

Modify

gender

age

number of
aneurysms

Selected
to match

Keep

GOS discharge

initial WFNS

Matched (n=246)

Matching groups

WFNS	Base de dados original		ISAT			Base de dados do subgrupo	
	Nº	%	Nº Endov.	Nº Neuroc.	% média	Nº	%
1	154	48,3%	674	661	62,5%	154	62,6%
2	81	25,4%	269	280	25,5%	63	25,5%
3	27	8,5%	66	68	6%	15	6,1%
4	46	14,4%	38	36	3,5%	9	3,6%
5	11	3,4%	26	15	2%	5	2%
Total	319	100%	1073	1070	99,5%	246	99,8%

Matching groups

S O G	WFNS 2				WFNS 3				WFNS 4				WFNS 5			
	Frequência original	% original	Nova frequência	Eliminados	Frequência original	% original	Nova frequência	Eliminados	Frequência original	% original	Nova frequência	Eliminados	Frequência original	% original	Nova frequência	Eliminados
1	25	30,9	19	5	6	22,2	3	3	6	13,0	1	5	0	0	0	0
2	13	16,1	10	3	4	14,8	2	2	7	15,2	1	6	0	0	0	0
3	35	43,2	27	8	12	44,4	7	5	21	45,7	4	16	5	45,5	2	3
4	4	4,9	3	1	1	3,7	1	0	7	15,2	1	6	1	9,1	1	0
5	4	4,9	3	1	4	14,8	2	2	5	10,9	1	4	5	45,5	2	3
T o t a l	81	100,0	63	18	27	100,0	15	12	46	100,0	9	37	11	100,0	5	6

Results evaluation

ISAT		Final Grading	Ours	
modified Rankin Scale			Glasgow Outcome Scale	
Function	Grade		Grade	Function
no symptoms	0	Good Result	1	no sequel
minor symptoms	1		2	mild sequel
mild restriction to life style	2		3	major sequel
significant restriction to life style	3	Poor Result	4	vegetative state
partly dependent	4		5	deceased
fully dependent	5			
deceased	6			

Results Stratification

ISAT		Final Grading	Ours	
modified Rankin Scale			Glasgow Outcome Scale	
Function	Grade		Grade	Function
no symptoms	0		1	no sequel
minor symptoms	1	Good Result	2	mild sequel
mild restriction to life style	2			
significant restriction to life style	3	Poor Result	3	major sequel
partly dependent	4			
fully dependent	5			
deceased	6		5	deceased

	mRS 0-2	GOS ² 1-2	
	mRS 3-5	GOS 3-5	

Statistics

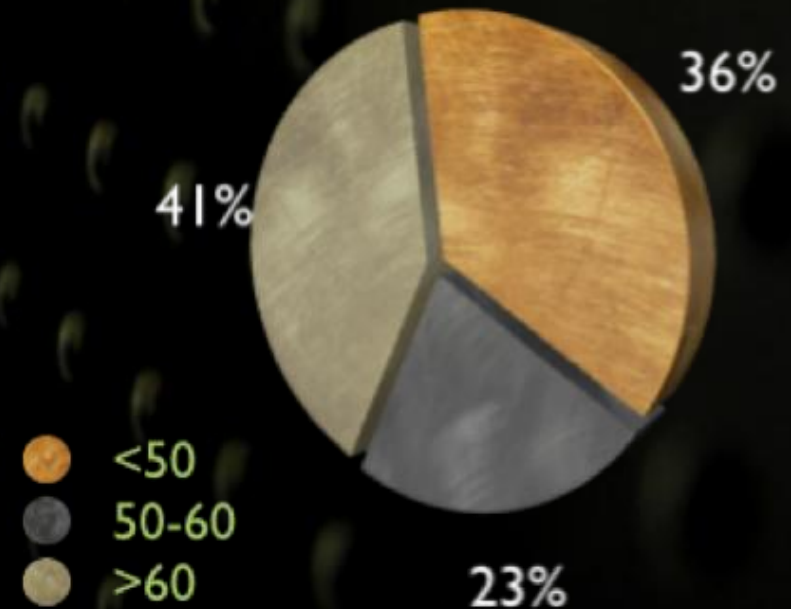
- χ^2
- Logistic regression analysis
- Microsoft[®] Office Excel 2007
- SPSS Statistics[®] 17.0

Results

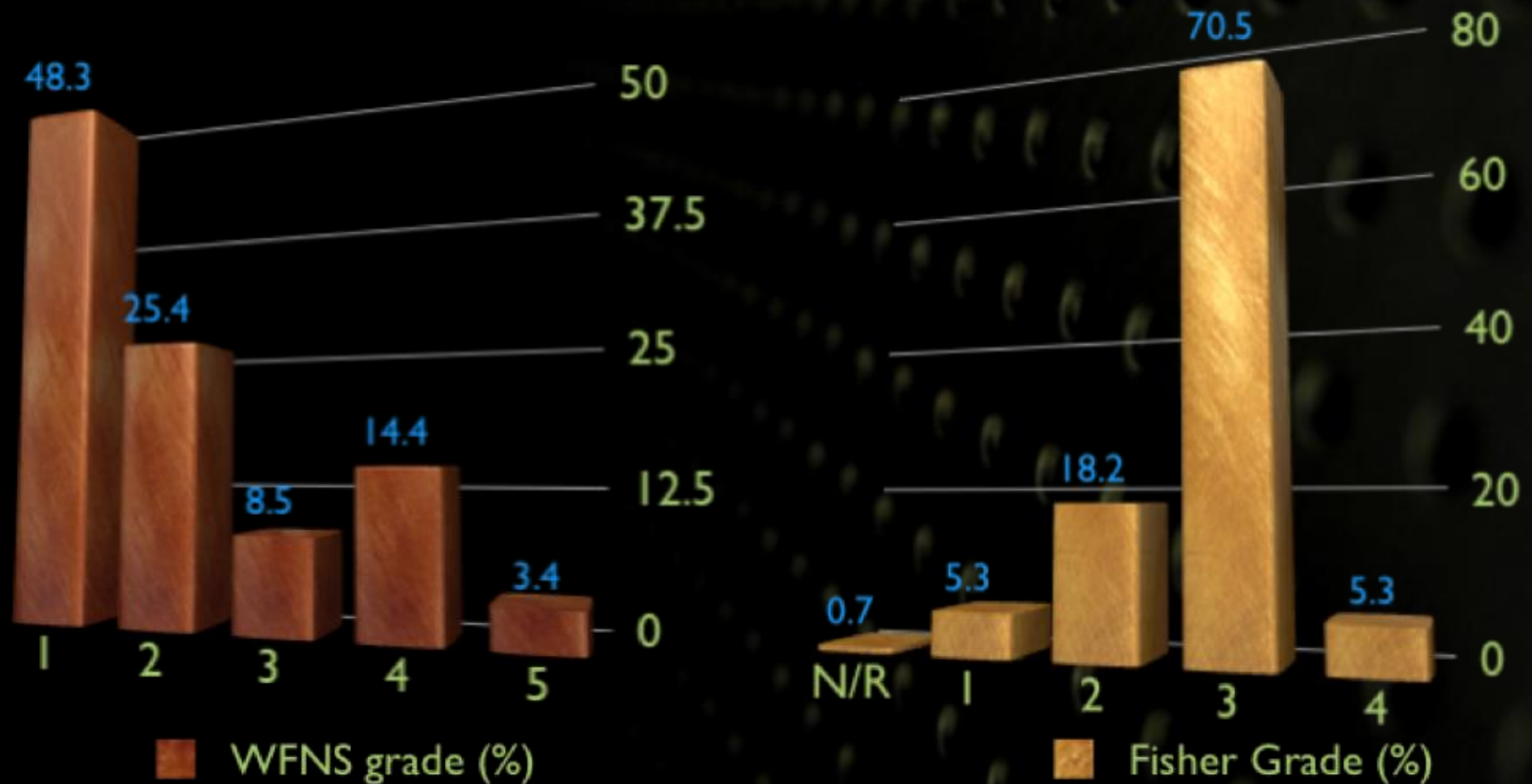
Patients

- Female - 228 (71%)
- Male - 91 (29%)

- Age range 18 - 86 yr
- Average - 55.8 yr (\pm 14.9)

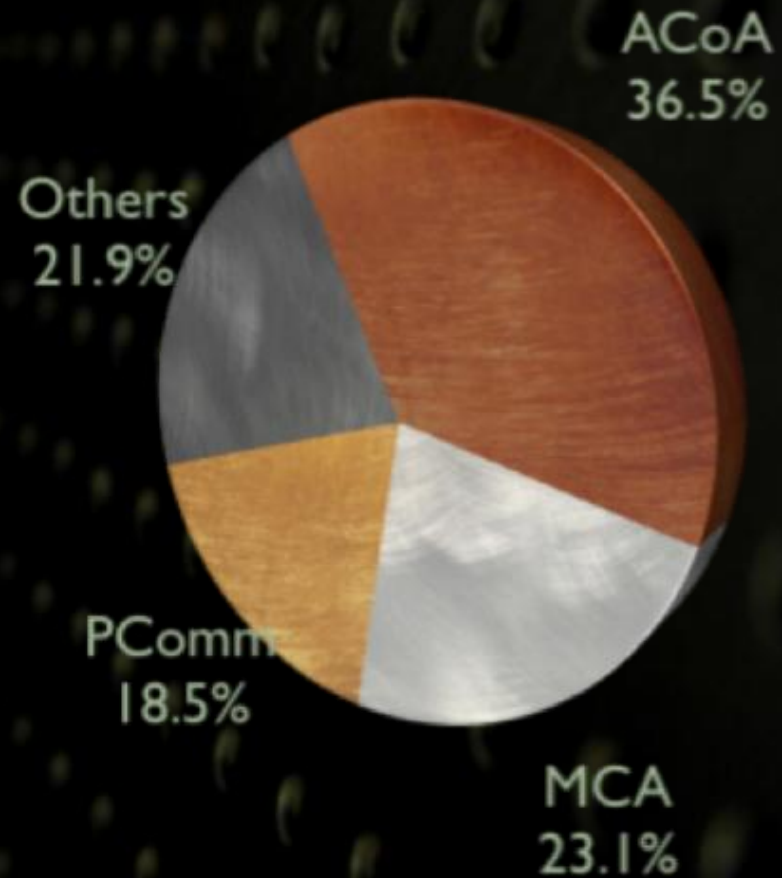
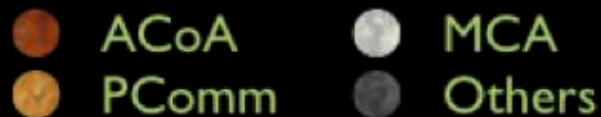


Initial WFNS and Fisher grade



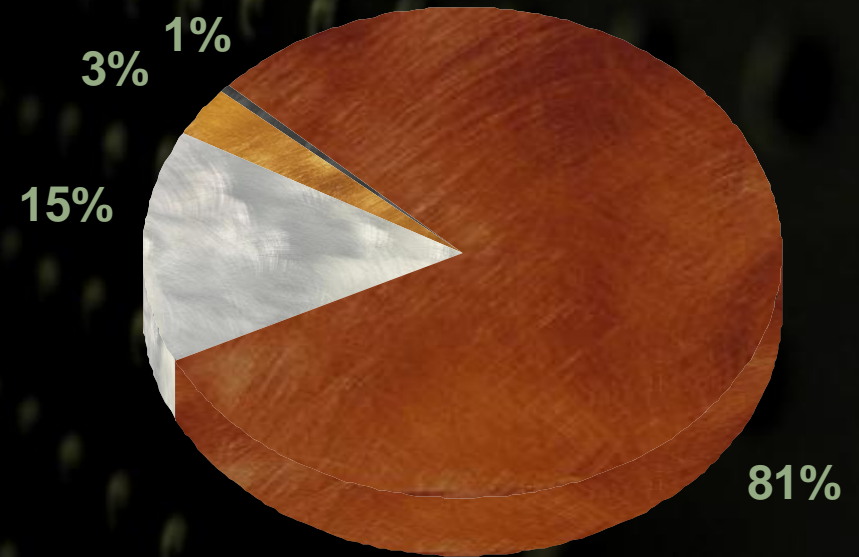
Aneurysms

- n = 394
- (319 patients)



Aneurysms

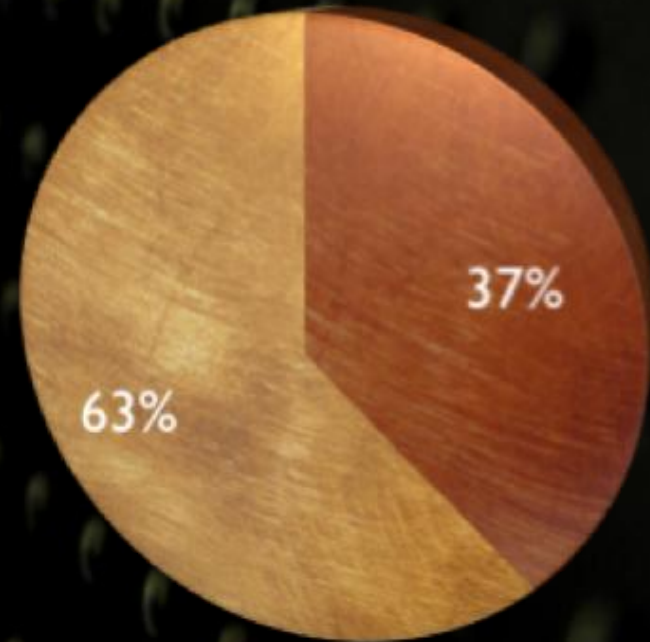
- 1 = 258
- 2 = 49
- 3 = 10
- 4 = 2



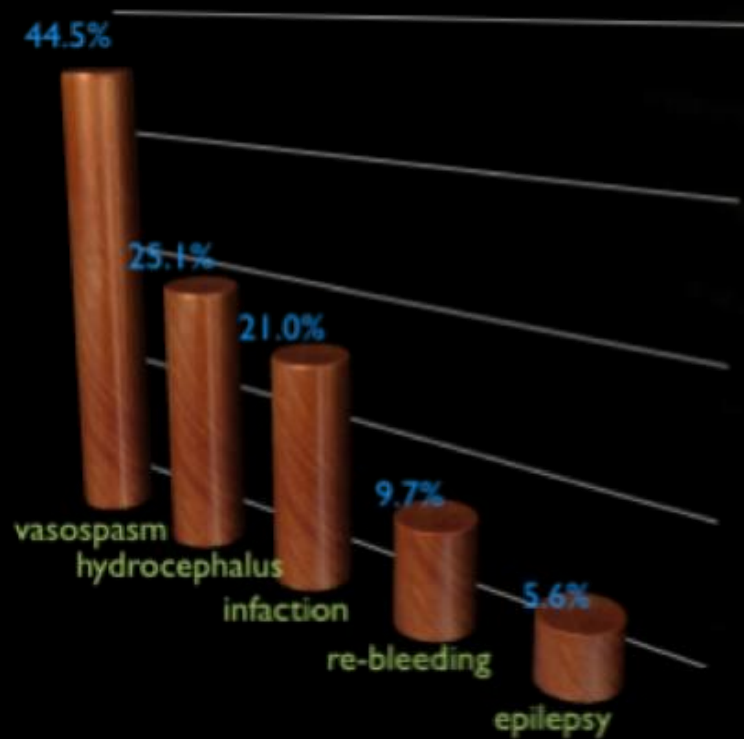
Timing

● early ● late

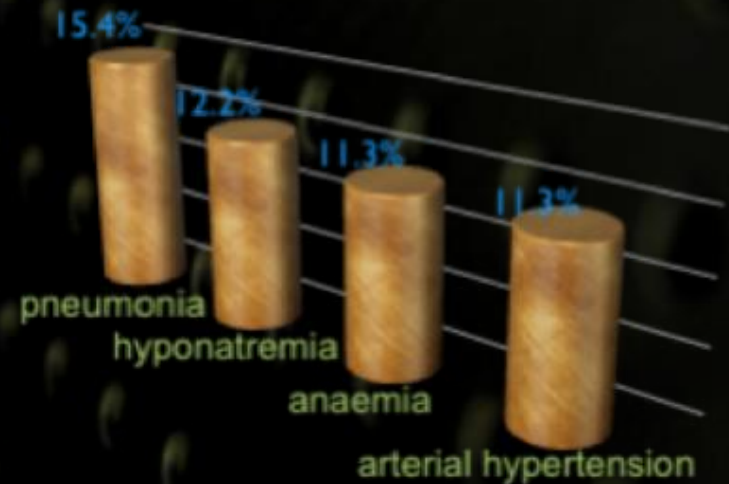
- early < 48 h
- late ~ after 2nd week



Complications

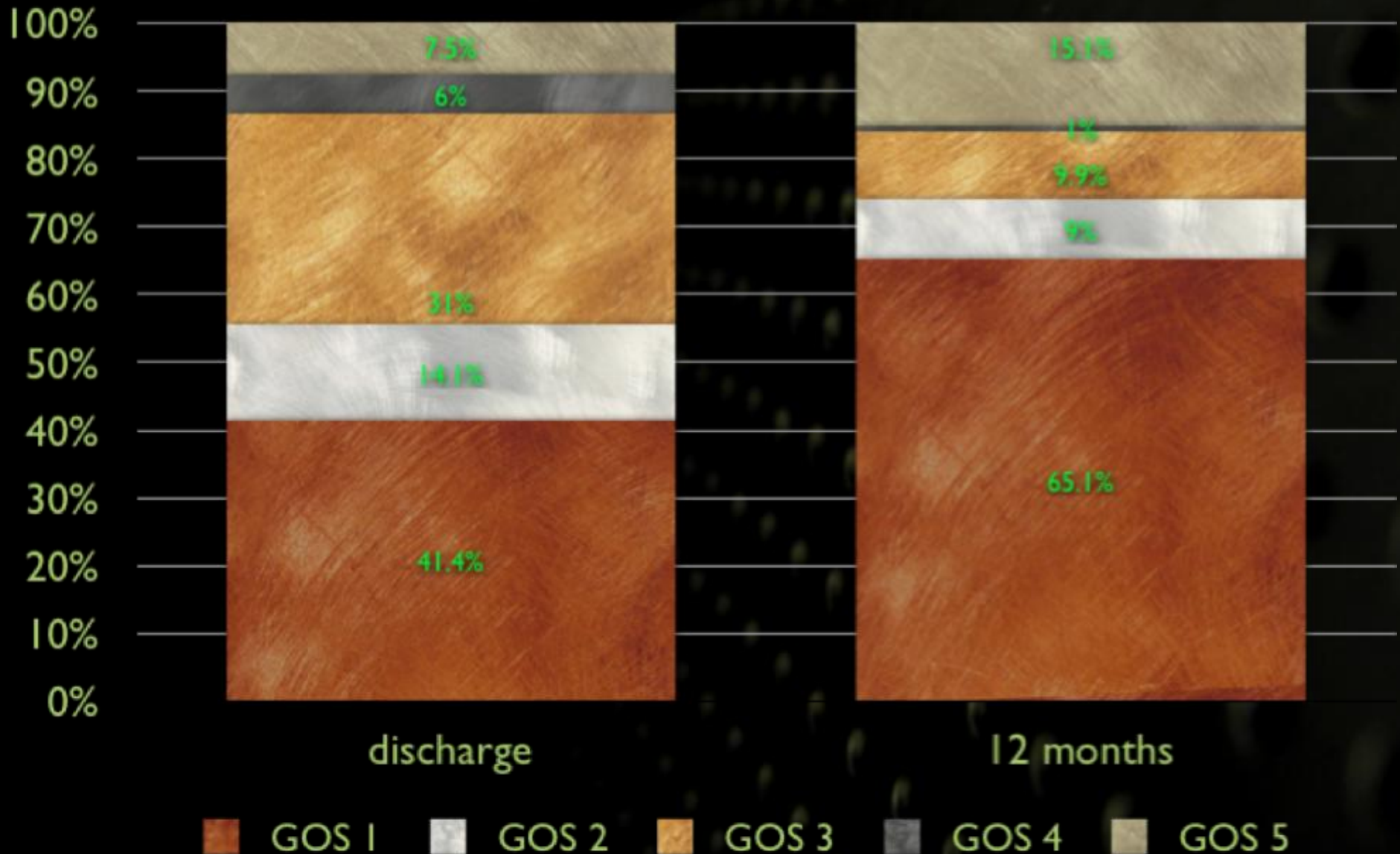


■ Neurosurgical



■ Others

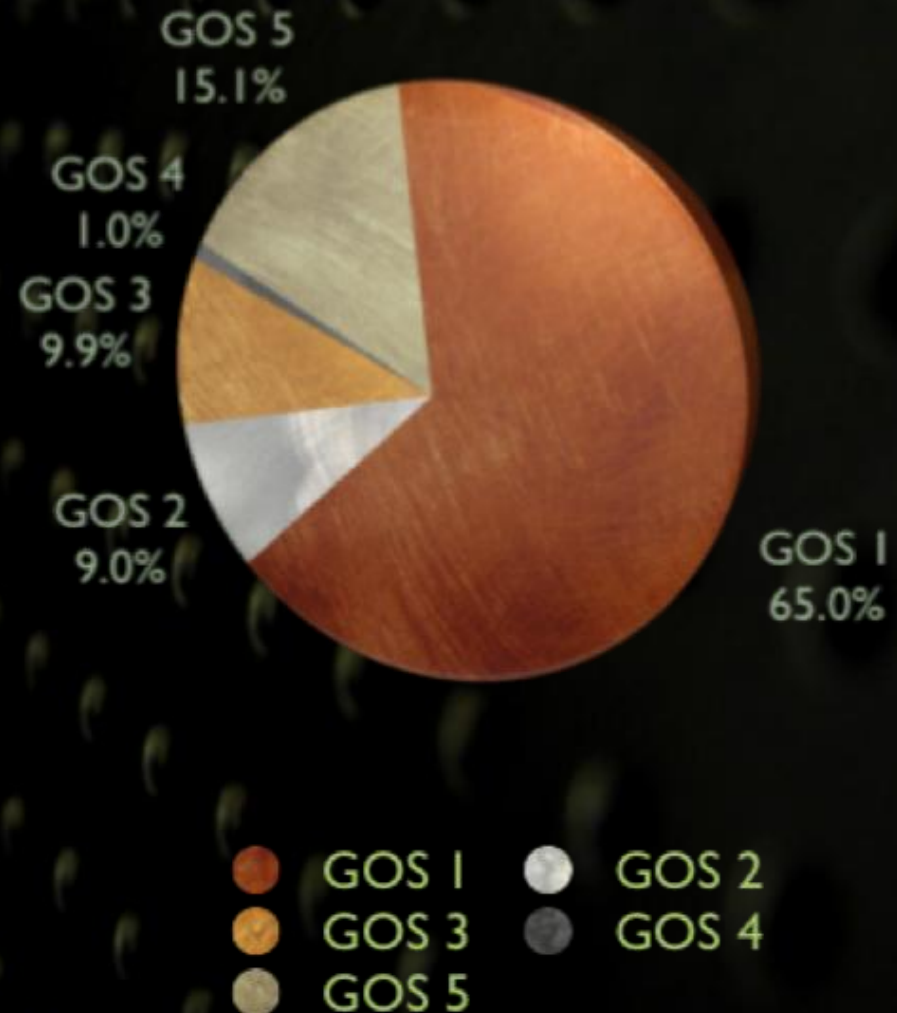
GOS - the first year



Outcome at one Year

- statistically sig ($p < 0.05$)
- independent pred. value

age, clinical grade,
vasospasm,
hydrocephalus,
infarction, epilepsy,
pneumonia



Good vs Bad outcome

- Good outcome

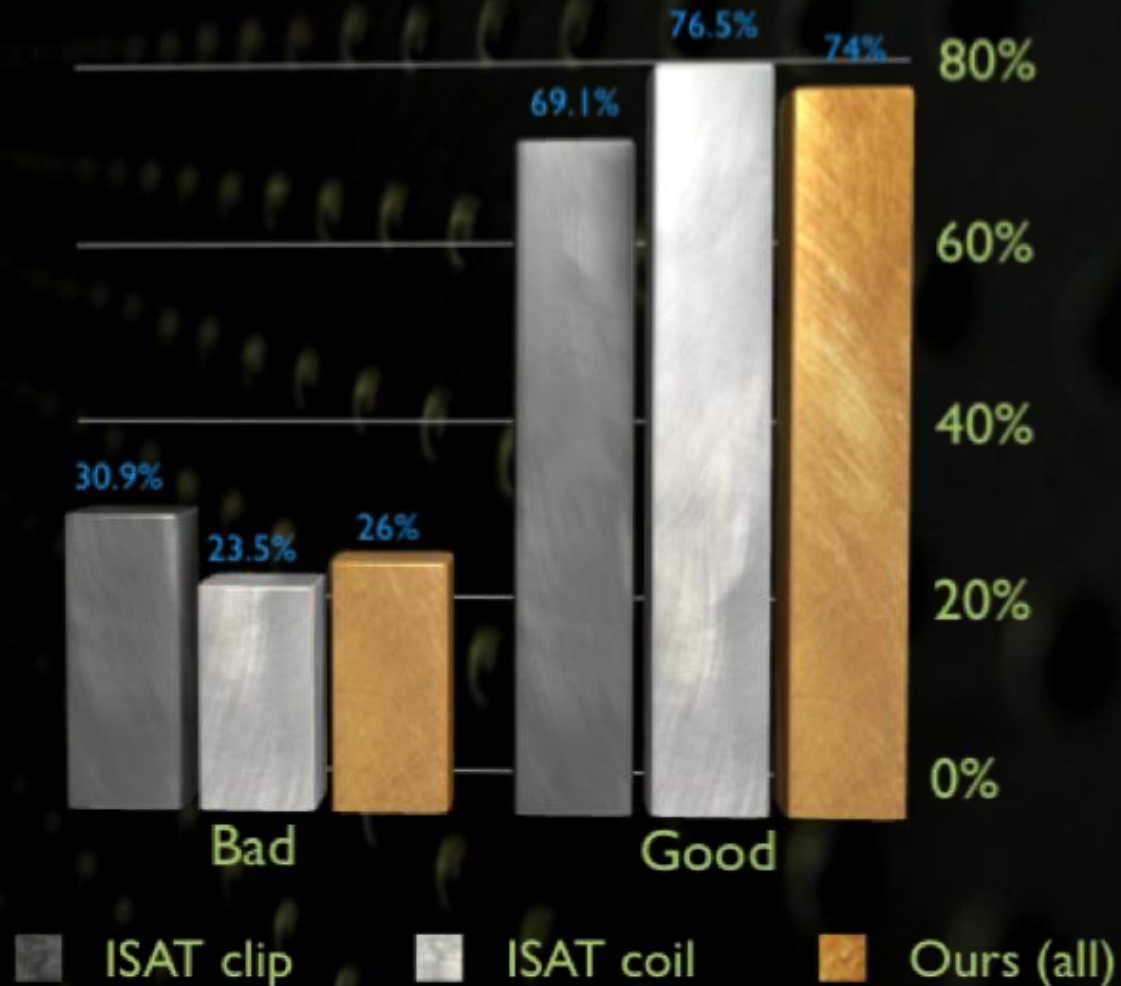
GOS 1-2

mRS 0-2

- Bad outcome

GOS 3-5

mRS 3-6



$p > 0,05$ clip/coil

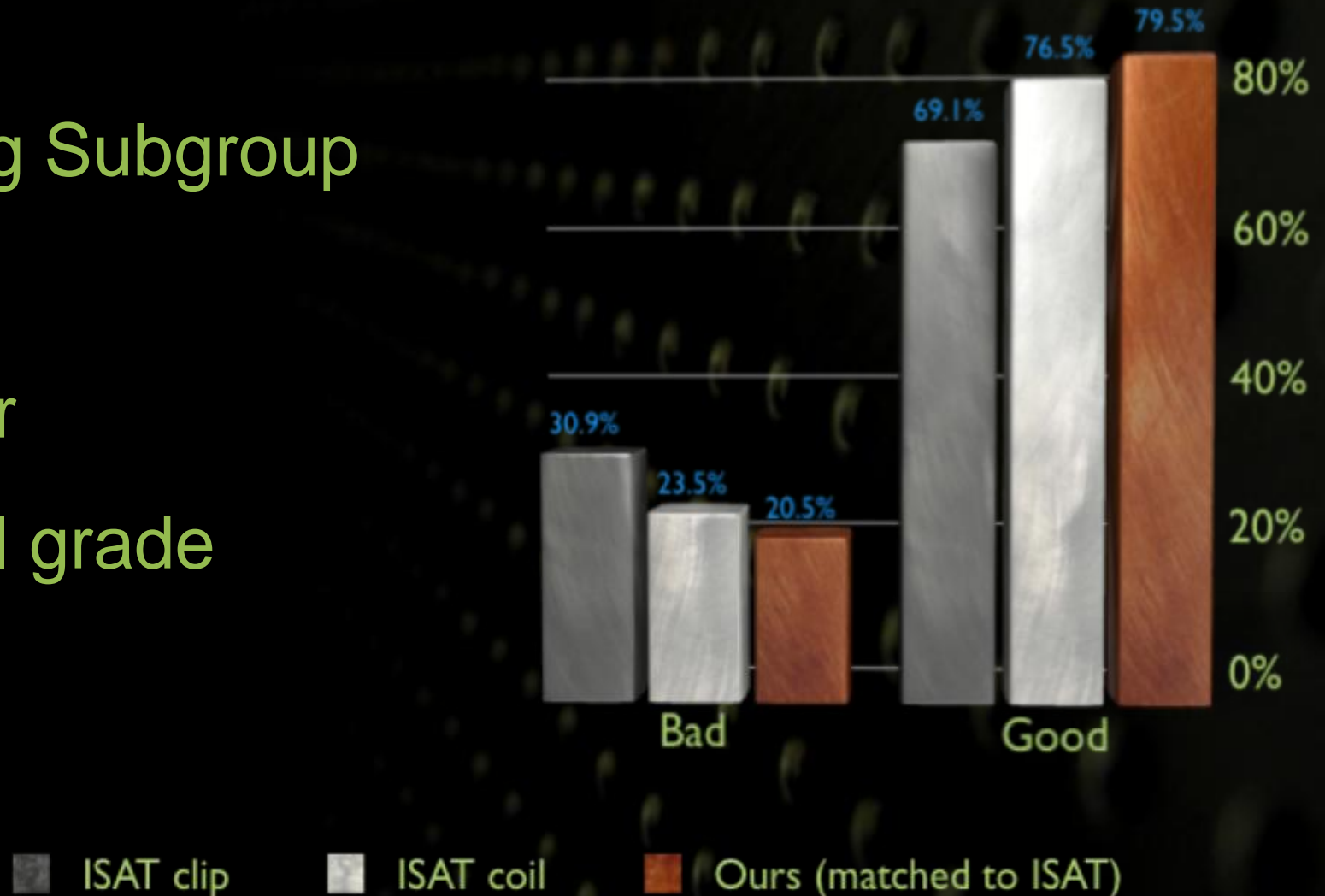
Good vs Bad outcome

- Matching Subgroup
 - age
 - gender
 - clinical grade

- n=246

$p > 0,05$ coil

$p < 0,05$ clip



Discussion & Conclusion

Our Series

- all surgical results
- non selected
- not all clipping was early
- better than ISAT surgical subgroup

Our Series

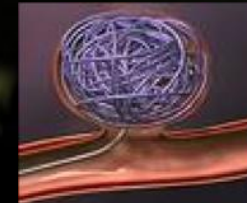
- subgroup matched to meet ISAT
- better than either ISAT subgroups

Differences

- retrospective vs prospective
- institutional vs multicenter
- long vs short treatment interval
- GOS vs mRS

Clipping

- still a valuable treatment modality
- superior efficacy
- possibly the best treatment for most



- referral and concentration of experience
- training new vascular surgeons

