13th International Symposium on Endovascular Therapeutics

Influence of on call vascular surgery team and off-hour effect in survival after ruptured Abdominal Aortic Aneurysm

María Alejandra Díaz, M.D.

Hospital Clinic, Barcelona

Authors

Fierro Alejandro; Mestres Gaspar; Díaz María; Yugueros Xavier; Tripodi Paolo; Riambau Vicente

Division of Vascular Surgery, Cardiovascular Institute, Hospital Clinic of Barcelona, University of Barcelona, Barcelona, Spain

Introduction

- Ruptured Abdominal Aortic Aneurysm (rAAA) is a life-threatening emergency
- Carries a community and in-hospital mortality up to 80%

ESVS guidelines recommended that abdominal aortic aneurysms treatment should be performed in centers with a volume of more than 30 elective cases per annum and that EVAR can be considered an option in the treatment of ruptured aneurysms, provided that the anatomy is favorable and the center is equipped, organized and the team experienced in emergency endovascular procedures.

Introduction

- Identifying prognostic factors like presence of a on call vascular surgery team at first hospital admission or time of hospital admission can change hospital protocols and mechanisms to improve general outcomes

The purpose of this study is to analize the influence of on call vascular surgery team and off-hour admission in survival after rAAA in Catalonia, Spain.

Methods

- Retrospective observational study
- Outcomes of patients undergoing emergent AAA repair
- Data: Catalonia Public Health official registries (based on registration of the minimum basic data set, MBDS)
- We collected age, sex, primary and secondary diagnoses, surgical procedures, vital status at discharge (live or dead) and the time of admission

Methods

- Inclusion criteria:
  - All hospitalization admissions in public health centers in Catalonia
  - January 2008 to December 2017
  - Diagnosis ICD-9-CM codes 441.3 (ruptured aneurysms)

- Exclusion criteria:
  - Diagnostic codes with both Open Repair and EVAR

Methods

Statistical analysis:

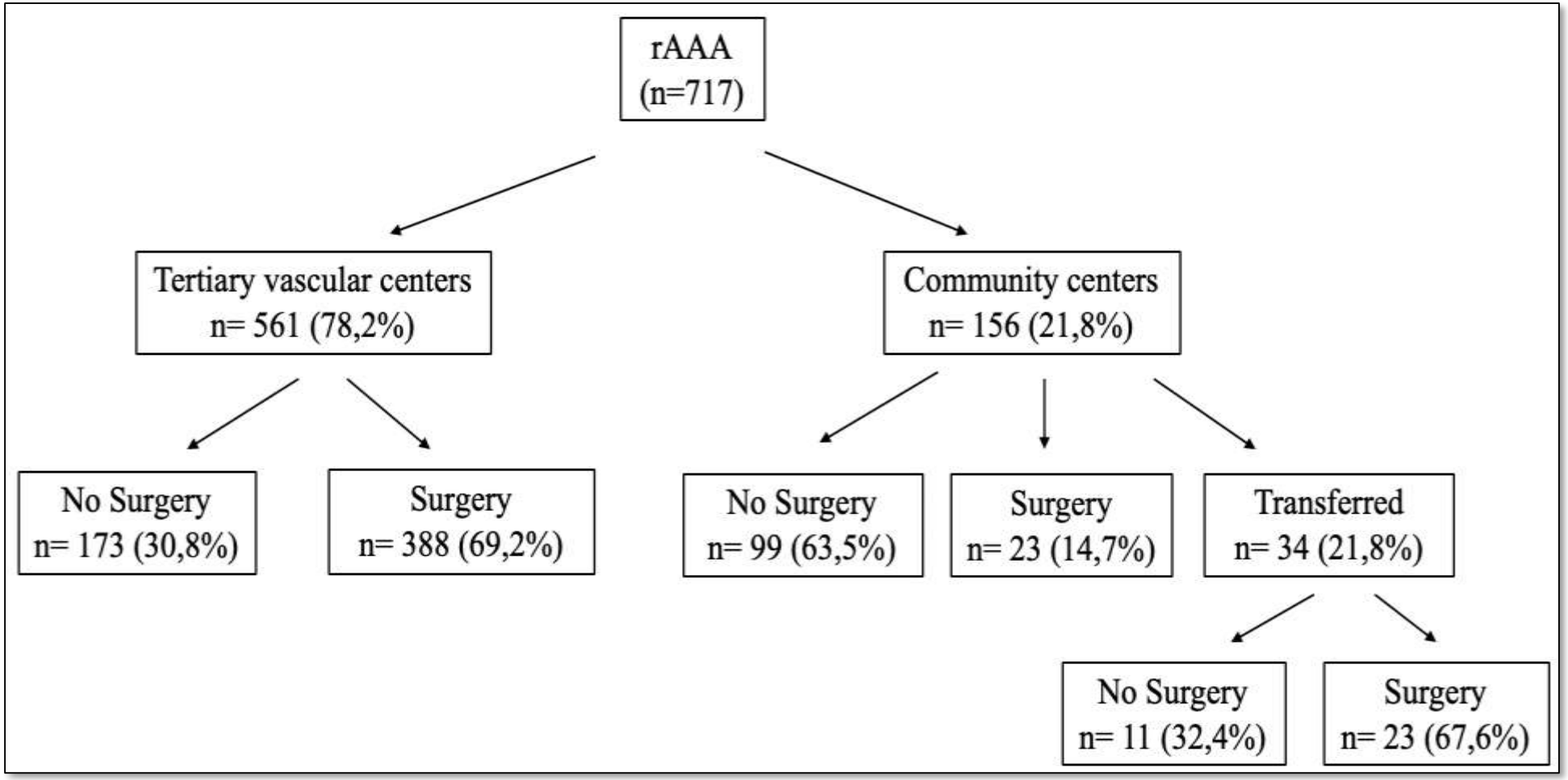
- Statistical Package for Social Sciences (SPSS), Version 23
- T-test for independent samples, Chi-square, ANOVA
- P value < 0.05 was deemed to be statistically significant

n= 717 patients

Results

Variable	n (or mean)	% (or SD)
Age (mean, years)	75,98	(SD 9,59)
Sex (Male)	660	92,1%
Smoking history	156	21,8%
Alcoholism or other drugs addiction	21	2,9%
Hypertension	400	55,8%
Dyslipemia	230	32,1%
Diabetes Mellitus	96	13,4%
Coronary disease	126	17,6%
Chronic renal failure	224	31,2%
Chronic pulmonary disease	96	13,4%
Other aneurysms	40	5,6%
PAD	41	5,7%

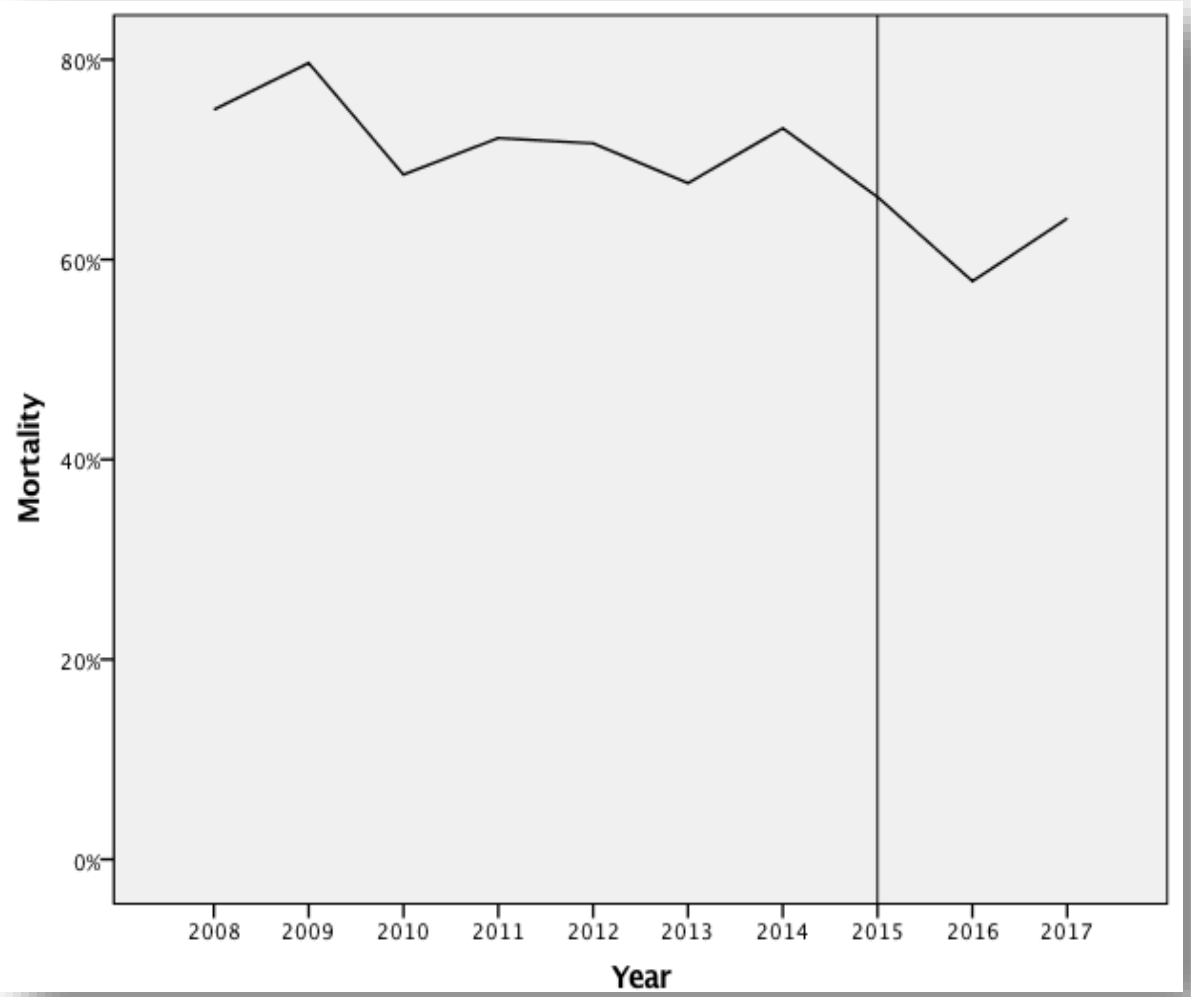
Results

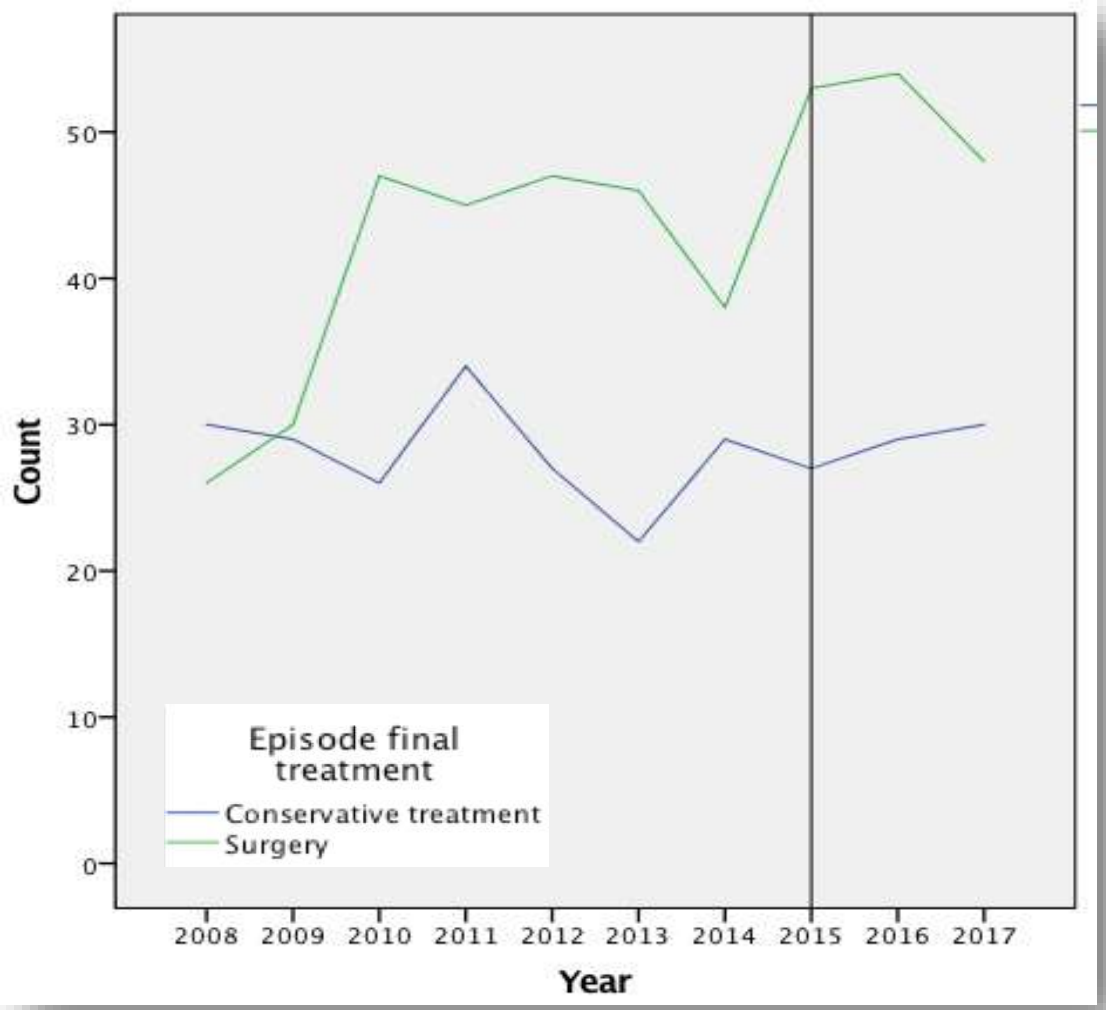

rAAA
(n=717)
Tertiary vascular centers
n= 561 (78,2%)
Community centers
n= 156 (21,8%)
No Surgery
n= 173 (30,8%)
Surgery
n= 388 (69,2%)
No Surgery
n= 99 (63,5%)
Surgery
n= 23 (14,7%)
Transferred
n= 34 (21,8%)
No Surgery
n= 11 (32,4%)
Surgery
n= 23 (67,6%)

Results

Characteristics	Tertiary vascular centers (n= 561)	Community centers (n= 156)	*P*
Surgery	388 (69.2%)	46 (29.5%)	**<0.001**
Overall mortality	357 (63.6%)	138 (88.5%)	**<0.001**
Postoperative mortality	184 (47.4%)	28 (60.9%)	0.085

Results


80%
60%
40%
20%
0%
Mortality
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
Year


50
40
30
20
10
0
Count
Episode final treatment
Conservative treatment
Surgery
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
Year

Results

		Time of admission		Day of admission	
		Day	Night	Weekend	Weekday
Overall mortality	n	351/507	144/210	197/280	298/437
	%	69,2%	68,6%	70,4%	68,2%
	P		0,862		0,541
Surgery decision	n	306/507	128/210	170/280	264/437
	%	60,4%	61,0%	60,7%	60,4%
	P		0,882		0,936
Surgery mortality	n	150/306	62/128	87/170	125/264
	%	49,0%	48,4%	51,2%	47,3%
	P		0,912		0,436

Results

		n	Open	EVAR	*P*
Type of center	Community	46	32(69.6%)	14 (30.4%)	**0.037**
	Tertiary	388	207 (53.4%)	181 (46.6%)	
Hour of admission	Day	306	165 (53.9%)	141 (46.1%)	0.457
	Night	128	74 (57.8%)	54 (42.2%)	
Day of admission	Weekday	264	140 (53.0%)	124 (47.0%)	0.287
	Weekend	170	99 (58.2%)	71 (41.8%)	
Mortality		212	142 (59.4%)	70 (35.9%)	**<0.001**

Conclusions

- Patients admitted to community centers are more usually treated with palliative treatment. Thus, global mortality is higher in these centers.

- However, when operated in community centers or transferred to tertiary hospitals for surgery, mortality is similar to general postoperative mortality

Conclusions

- No differences observed in terms of mortality or type of surgery in cases admitted on off hour, this could be explained by the presence of on call vascular surgery teams

- This reinforces the idea that reference centers have trained teams to handle this type of emergencies