Robotic thoracic surgery - A comparison of age-groups outcomes.

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DISCLOSURES

We do not have any relevant financial relationships to disclose.

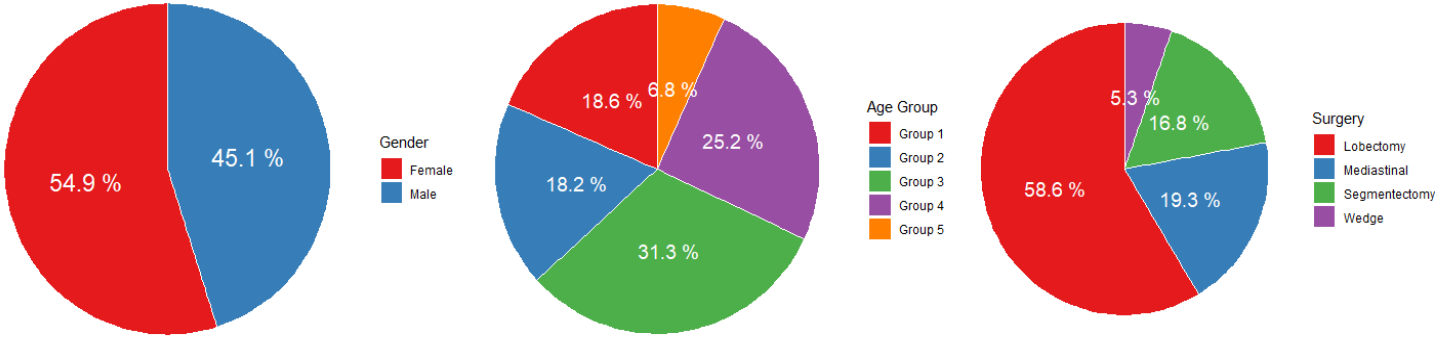
Introduction - Objectives

To compare the duration of the surgery, admission, ICU, and chest tube days and outcomes: morbidity, mortality, and readmissions of 457 robotic thoracic procedures according to age groups.

Methods

Retrospective analysis of a prospective database of two groups of surgeons (São Paulo and Rio de Janeiro - Brazil). The patients were operated on between Feb 2015 - Dec 2019 and divided into five age-groups. Group 1 - less than 50 years old (YO), Group 2 - 50-59 YO, Group 3 - 60-69 YO, Group 4 - 70-79 YO, and Group 5 - 80 YO or more. Duration of the surgery, admission times, ICU and chest tube days, and the patient's outcomes: morbidity, mortality, and readmissions of 457 robotic thoracic procedures according to age groups were studied, and statistical analysis was done among those variables according to such groups.

Results – Table 1



- 457 consecutive patients were included in this study. 251 (55%) were females.
- The distribution of the patients in age groups were: Group 1 (<50 YO) - 85 patients (pts), Group 2 (50-59YO)- 83 pts, Group 3 (60-69 YO) - 143 pts, Group 4 (70-79 YO) - 115 pts, and Group 5 (>80YO) - 31 pts.
- We did lobectomies in 268 pts, anatomic segmentectomies in 77 cases (in malignant cases, we also did lymphadenectomy), mediastinal diaphragmatic, pleural and other surgeries in 88 cases, and wedge resections in 24 patients.

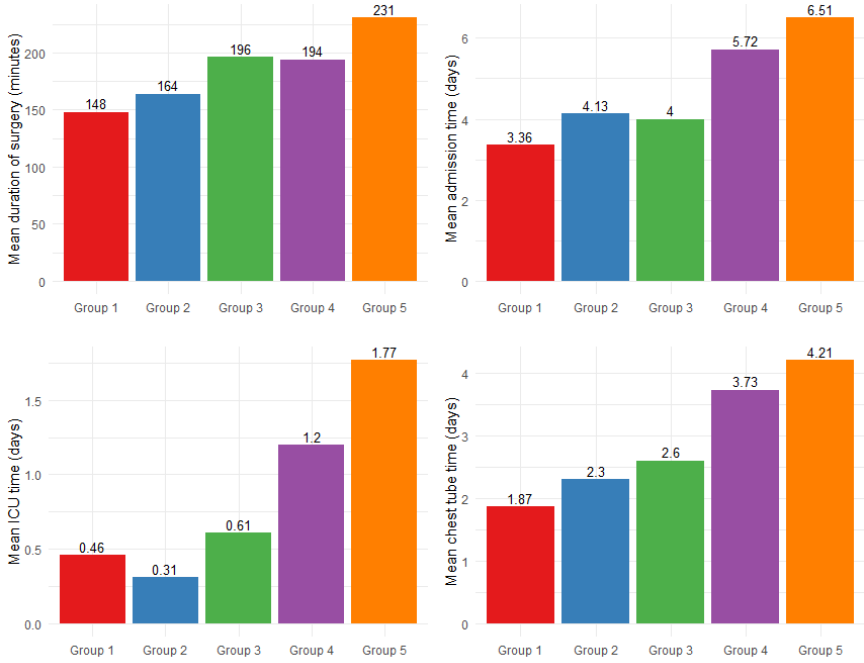
Results

•The general mean duration of the surgery was similar in groups 1 and 2 (mean of 148 and 164 minutes) and bigger in groups 3, 4, and 5 (196, 194, and 231 minutes) - **p<0.001**.

•Admission time was similar in groups 1, 2, and 3 (3.36, 4.13, and 4 days) and bigger in groups 4 and 5 (5.72 and 6.51 days) - **p<0.001**.

•The same was seen about ICU days, similar time in groups 1, 2, and 3 (0.46, 0.31 and 0.61 days - several patients did not go to ICU) and longer time in Groups 4 and 5 (mean of 1.20 and 1.77 days) - **p< 0.001**.

•Time of chest tube was the same in groups 1, 2, and 3 (mean of 1.87, 2.30, and 2.60 days) and longer in groups 4 and 5 (mean of 3.73 and 4.21 days) - **p< 0.001.**

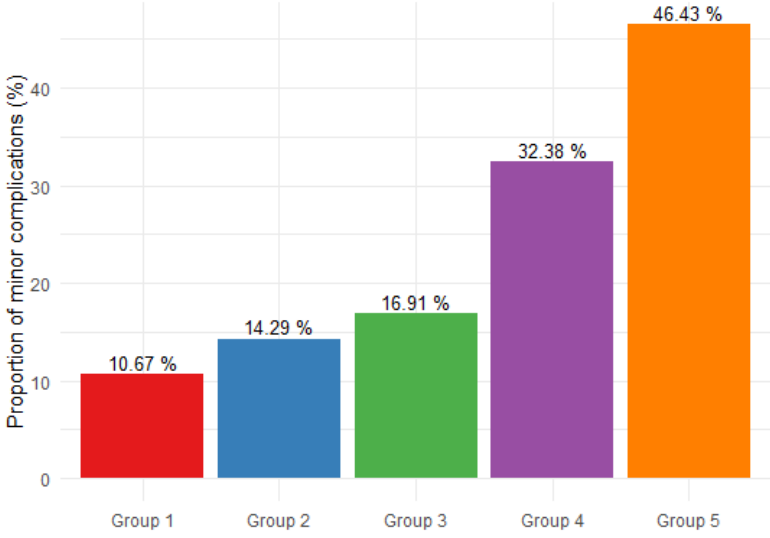


Results

•Minor complications occurred in 10.67% in group 1, 14.29% in group 2, 16.91% in group 3, 32.38% in group 4 and 46.43% in group 5 - **p<0.001** among all the five groups.

• Perioperative mortality was 0 in groups 1, 2, and 3, 1 case in group 4 (0.87%), and 1 case in group 5 (3.23%) - p= 0.1115.

• The readmission rate was 1.17% in group 1, 6.02% in group 2, 4.20% in group 3, 13.04% in group 4 and 6.45% in group 5 - p=0.2271. The late mortality was of 0, 1, 1, 2 and 0 in groups 1 to 5 - **p= 0.6815**.



Main Diagnosis

Pulmonary malignant - 337

(Adenocarcinoma > 55%)

Pulmonary benign - 16

(Total wedge resections – 24 cases for benign lesions or metastases)

Mediastinal, pleural, diaphragmatic- 88

Others - 16

Conclusions

Robotic thoracic surgery is safe in all age-groups, has an increased surgical time, admission time, ICU stays, and chest tube duration only in groups 4 and 5, and an important increased rate of minor complications in the same groups, explaining the longer admission and ICU times. However, it occurred without any repercussion on readmissions and perioperative or late mortality.

TABLE 1: Patients characteristics on each age range. Mean, median, standard deviation and p-value on Kruskal-Wallis' test for quantitative variables; absolute frequency, proportion and p-value on Chi-Square test for qualitative variables.

Variables/Groups I to V	AGE RANGE					P-Value
	I - Less than 50 YO	II - 50 to 59 YO	III - 60 to 69 YO	IV - 70 to 79 YO	V - 80 Or more YO	
Total on each group	85 (18,60%)	83 (18,16%)	143 (31,29%)	115 (25,64%)	31 (6,78%)	NA
Total time of surgery (minutes)	148,70 130 (75,81)	164,74 151,50 (78,97)	196,20 185 (70,92)	194,60 180 (76,72)	231,81 228,50 (80,91)	<0,001 I=II III=IV=V
Admission time (days)	3,36 3 (2,38)	4,13 3 (7,04)	4 3 (3,00)	5,72 4 (5,93)	6,51 5 (5,55)	<0,001 I=II=III IV=V
ICU time (days)	0,46 0 (0,91)	1,31 0 (6,75)	0,61 0 (1,13)	1,20 1 (1,93)	1,77 1 (1,79)	<0,001 I=II=III IV=V
Chest tube time (days)	1,87 1 (1,90)	2,30 1,5 (2,85)	2,60 2 (2,82)	3,73 2 (4,80)	4,21 3 (4,35)	<0,001 I=II=III III=IV=V
Female Gender	51 (60%)	51 (61,45%)	80 (55,94%)	52 (45,22%)	17 (54,84%)	0,1499
Discharge with chest tube	0 (0%)	2 (2,63%)	5 (3,76%)	5 (4,95%)	0 (0%)	0,3019
Intraoperative mortality	0 (0%)	0 (0%)	0 (0%)	1 (0,87%)	1 (3,23%)	0,1115
Late mortality	0 (0%)	1 (1,20%)	1 (0,70%)	2 (1,74%)	0 (0%)	0,6815
Complications	8 (10,67%)	11 (14,29%)	23 (16,91%)	34 (32,38%)	13 (46,43%)	<0,001
Readmissions	1 (1,17%)	5 (6,02%)	6 (4,20%)	15 (13,04%)	2 (6,45%)	0,2271
Smoking history	11 (13,92%)	36 (46,15%)	84 (60,43%)	71 (62,83%)	16 (51,61%)	<0,001