EVALUATION OF EARLY CARDIAC TOXICITY IN RADIOTHERAPY FOR STAGE III SMALL CELL LUNG CANCER: PRELIMINARY ANALYSIS HEART DOSIMETRIC STUDY

Dr.ssa Marianna Miele

Radioterapia Oncologica

Università Campus Bio-Medico Roma
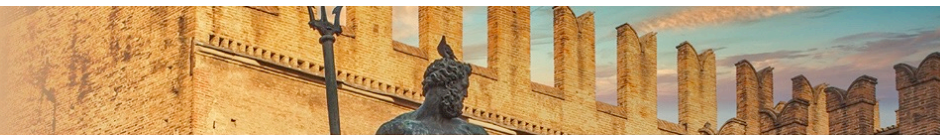
DICHIARAZIONE

Relatore: Marianna Miele

Come da nuova regolamentazione della Commissione Nazionale per la Formazione Continua del Ministero della Salute, è richiesta la trasparenza delle fonti di finanziamento e dei rapporti con soggetti portatori di interessi commerciali in campo sanitario.

- Posizione di dipendente in aziende con interessi commerciali in campo sanitario **(NIENTE DA DICHIARARE)**
- Consulenza ad aziende con interessi commerciali in campo sanitario **(NIENTE DA DICHIARARE)**
- Fondi per la ricerca da aziende con interessi commerciali in campo sanitario **(NIENTE DA DICHIARARE)**
- Partecipazione ad Advisory Board **(NIENTE DA DICHIARARE)**
- Titolarità di brevetti in compartecipazione ad aziende con interessi commerciali in campo sanitario **(NIENTE DA DICHIARARE)**
- Partecipazioni azionarie in aziende con interessi commerciali in campo sanitario **(NIENTE DA DICHIARARE)**
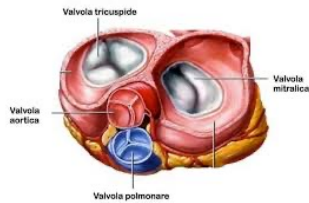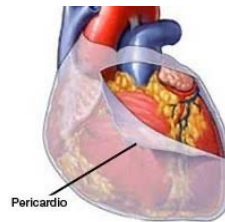- Altro

AIM OF STUDY

RADIOTHERAPY
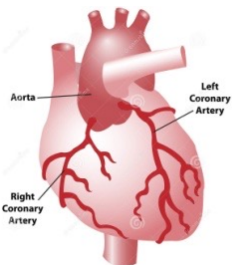
Arrhythmias

Valvular Disease

Pericardial Disease
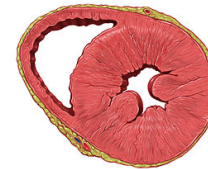
Ischemic Heart Disease

Conduction Abnormalities

The aim of this study was to investigate a correlation between the heart dosimetry and early heart demage in patients with LA-NSCLC undergoing chemoradiotherapy (CRT).

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MATERIAL AND METHODS

PTV Volume
Heart Dmax
Heart Dmean
V5
V30
V45
V50
LADDmax
LADDmean

Cumulative Dose Volume Histogram
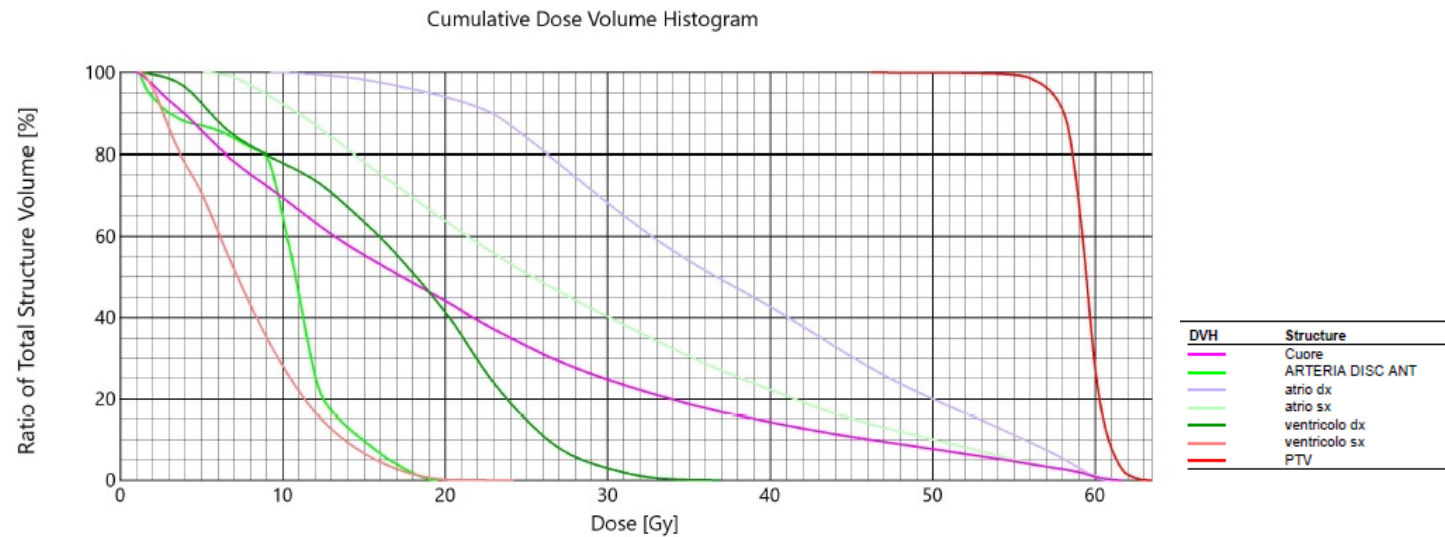
The difference in cardiac dosimetry in patients who have experienced cardiac and no-cardiac events (CV) was assessed by T-Test. Dosimetric parameters that resulted different between patients who experienced CV and patients who did not, were subjected to regression analysis.

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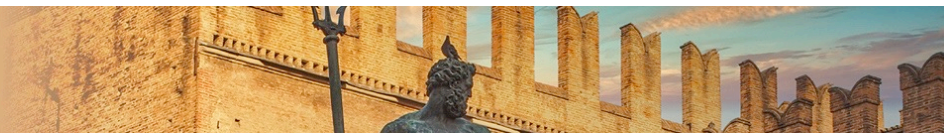
RESULTS

| Patients' and treatment characteristics	Values	%
Number of patients	34	/
Median age	69.5 (43-87)	
Histology 1. Adeno 2. Squamous 3. Large Cell	 18 15 1	 52.9 44.2 2.9
Clinical Stage (according to AJCC VIII edition) • IIIA • IIIB • IIIC	 21 12 1	 61.8 35.3 2.9
Concurrent chemotherapy regimen: Platinum-based doublets (yes/no)	22/12	64.7/35.3
Median Total Radiation Dose (EQD2)	60Gy in 30 fx	

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RESULTS

Type of Cardiovascular Events	N°pts	Years (mean)	Time of the onset after chemoradiation (mean)	packs of cigarettes/year (mean)
Conduction abnormalities				
• Atrial fibrillation	4	66	3.7 months	77
• Supraventricular Tachycardia	2	66.5	2.5 months	58
• Atrioventricular block (second degree)	1	79	3 months	67
Heart Failure	1	78	3 months	81

No patients died of cardiovascular complications
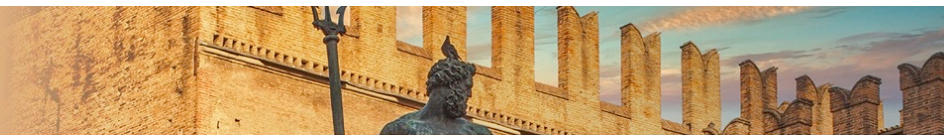
RESULTS

Descriptive Statistics

	N	Minimum	Maximum	Mean	SD
PTV Volume	34	124.94	748.33	341.17	153.78
Heart Dmax	34	51.96	108	61.86	9.25
Heart Dmean	34	3.38	31.04	13.26	6.79
V5	34	13.13	99.99	52.06	25.22
V30	34	1.38	48.27	16.05	11.04
V45	34	0.39	16.98	6.88	4.83
V50	34	0.10	12.36	4.59	3.65
LADDmax	34	2.67	49.61	23.63	15.33
LADDmean	34	1.02	31.03	8.97	7.27
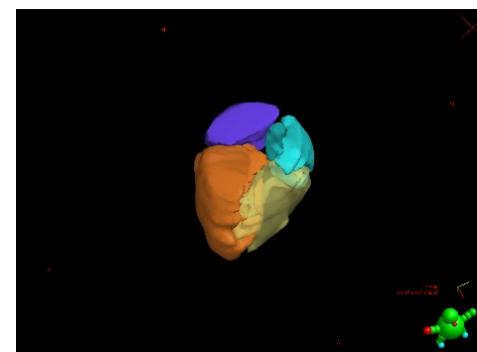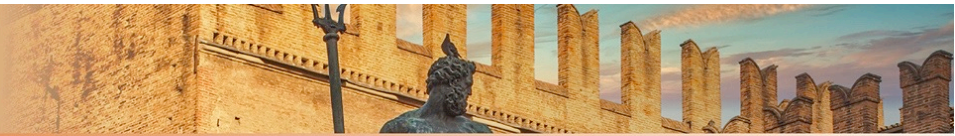
RESULTS
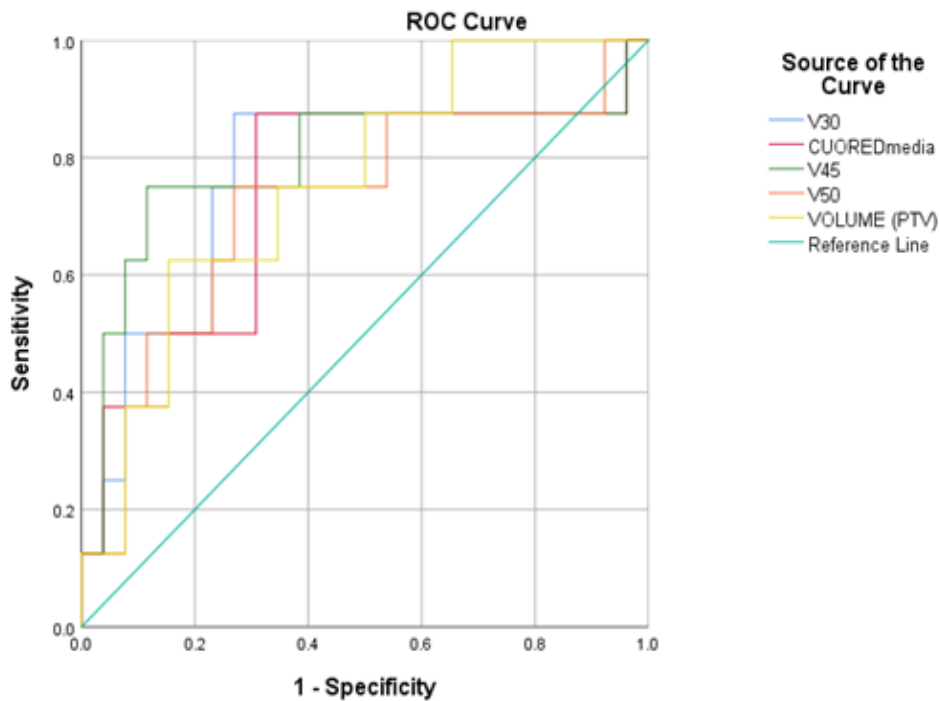
	CV events (0 NO/1 SI)	Mean	SD	p-value	AUC
PTV Volume	0	310.02	140.40	P=0.031	0.755
	1	442.40	160.50		
Heart Dmean	0	11.89	5.86	P=0.032	0.736
	1	17.72	8.06		
V30	0	13.40	8.86	P=0.009	0.764
	1	24.67	13.53		
V45	0	5.68	4.09	P=0.007	0.793
	1	10.79	5.24		
V50	0	3.85	3.25	P=0.030	0.721
	1	7.00	4.02		

Differences in mean values between groups with CV and non-CV events

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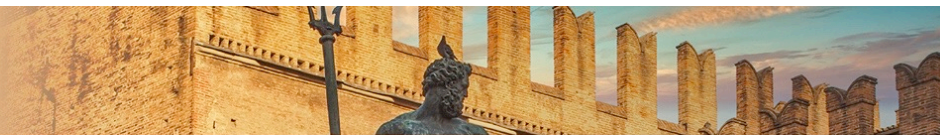BOLOGNA, 25-27 NOVEMBRE
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This preliminary data shown that all parameters evaluated, except left anterior descending artery (LAD) dose, were found to be predictive of cardiovascular damage after CRT in these patients.

These results encourage us to continue the study in order to estimate the overall and individual incidence of any early cardiac event and to identify additional variables that cause an increased risk of acute cardiac events.

AIRO2022
XXXII CONGRESSO NAZIONALE AIRO
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XII CONGRESSO NAZIONALE AIRO GIOVANI
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Grazie per l'attenzione

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