XXXII CONGRESSO NAZIONALE AIRO
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AIRO2022

Radioterapia di precisione per un'oncologia innovativa e sostenibile

BOLOGNA, 25-27 NOVEMBRE
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CORRELATION BETWEEN CHARLSON COMORBIDITY INDEX AND ACUTE TOXICITY IN ELDERLY PATIENTS (AGED ≥75) TREATED WITH CURATIVE INTENT RADIOTHERAPY, MANAGED BY A MULTIDISCIPLINARY ONCOGERIATRIC MODEL

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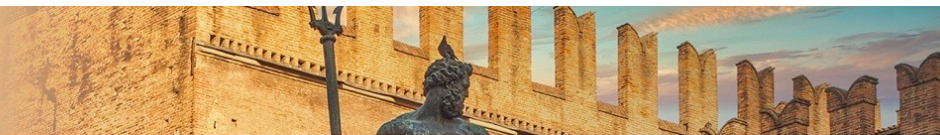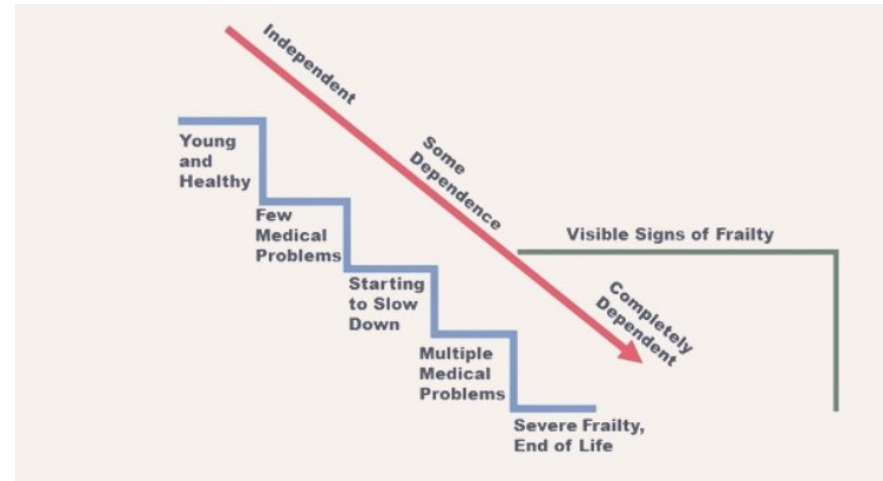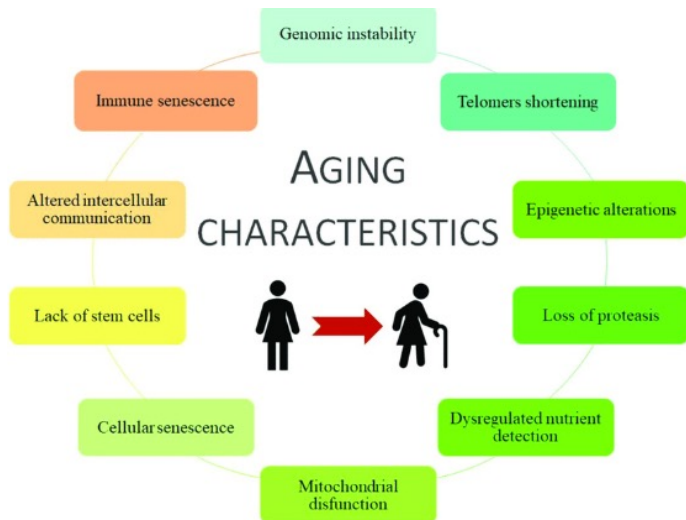
DICHIARAZIONE

Relatore: Marzia Borgia

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 **(NIENTE DA DICHIARARE)**

- Altro

BACKGROUND

- **Aging** is a **multidimensional issue** and is related to several **comorbidities**;

- Few data about **efficacy and toxicity of Radiation Therapy (RT) in the elderly and frail patients;**

- Lack of experience mainly in terms of **objective tools/models** for specific evaluations**.**

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BACKGROUND

- **TOOLS=** **G8 Questionnaire**: a method for frailty patients evaluation; **RTOG scales** for acute and late toxicities

- **Since 2020**, a prospective study was designed in **Chieti** based on a **Multidimensional Model** with **Geriatricians** for elderly patients ($\geq$ 75 years), using **G8 evaluation and toxicity RTOG scales** recorded.

- Finally, **Charlson Comorbidity Index (CCI)** was retrospectively applied for whole cohort of patients for predicting mortality by classifying or weighting comorbidities.

END POINTS:

- ✓ *to assess frailty status in elderly patients treated with curative RT*
- ✓ *to evaluate the correlation between acute toxicity and Charlson Comorbidity Index (CCI).*

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METHODS

- This prospective observational study was designed for all patients with **≥75years**, candidate for **curative Radiotherapy**.

- These patients underwent **Geriatric8 questionnaire (G8q)**, before and at the end of RT.
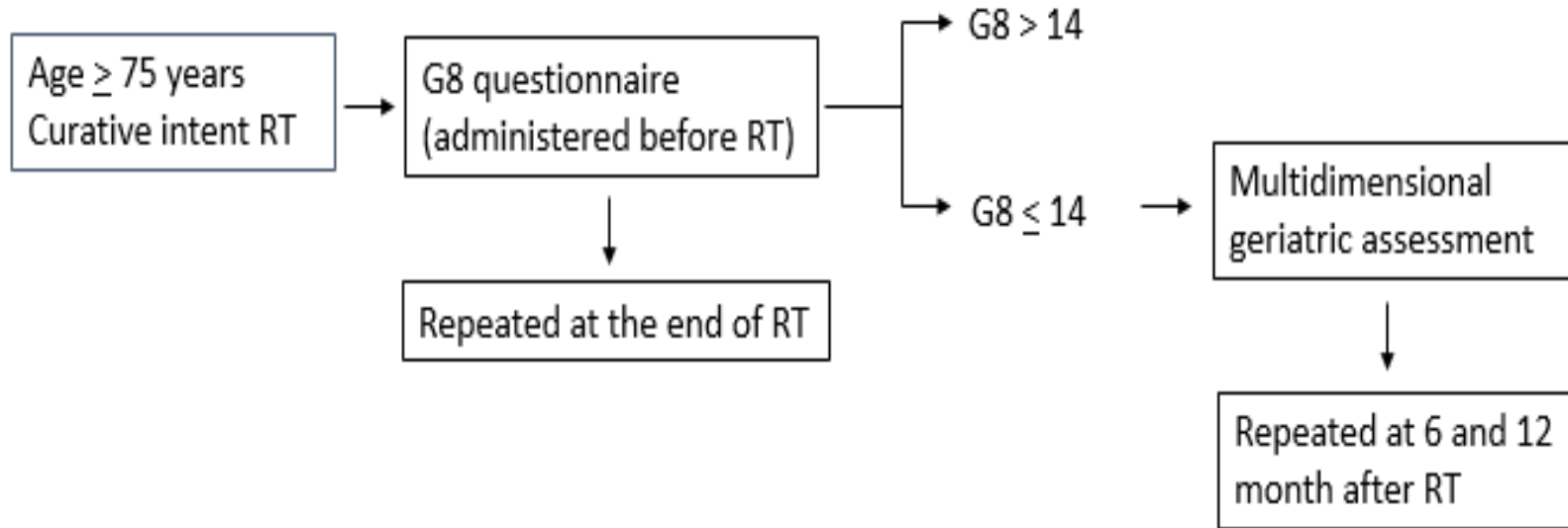
Items	Possible responses (score)
Has food intake declined over the past 3 months due to loss of appetite, digestive problems, chewing, or swallowing difficulties?	0 = Severe decrease in food intake
	1 = Moderate decrease in food intake
	2 = No decrease in food intake
Weight loss during the last 3 months?	0 = Weight loss >3 kg
	1 = Does not know
	2 = Weight loss between 1 and 3 kg
	3 = No weight loss
Mobility?	0 = Bed or chair bound
	1 = Able to get out of bed/ chair but does not go out
	2 = Goes out
Neuropsychological problems?	0 = Severe dementia or depression
	1 = Mild dementia
	2 = No psychological problems
Body mass index (BMI)? (weight in kilograms) / (height in square metres)	0 = BMI <19
	1 = BMI 19 to <21
	2 = BMI 21 to <23
	3 = BMI ≥23
Takes more than three prescription drugs per day?	0 = Yes
	1 = No
In comparison with other people of the same age, how does the patient consider his/her health status?	0.0 = Not as good
	0.5 = Does not know
	1.0 = As good
	2.0 = Better
Age	0 = >85
	1 = 80–85
	2 = <80
Total score 0–17	Cut-off ≤ 14

G8 Questionnaire

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METHODS

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METHODS

▪Patients with **G8 score ≤14** were

evaluated by a **Multidimensional**

Geriatric Assessment, investigating

cognitive, **functional**, and **nutritional**

domains, to define the frailty phenotype.

MULTIDIMENSIONAL GERIATRIC ASSESSMENT	
DOMAINS	Test Score
COGNITIVE	
MMSE (minimental state examination)	24-30 normal cognitive status <24 cognitive deficit
GDS (geriatric depression scale)	10 - 15 severe depression 5 - 10 mild depression 0 - 5 absence of depression
FUNCTIONAL	
ADL (Activity of daily living)	0 - 6 (6 = absence of deficit)
IADL (Instrumental activity of daily living)	0 - 8 (8 = absence of deficit)
Tinetti assessment tool (gait and balance test)	0 - 1 not walking subject 2 - 19 high risk for falls 20 - 28 low risk for falls
NUTRITIONAL	
MNA – short (mini nutritional assessment)	12-14 good nutritional state 8 - 11 risk for malnutrition 0 - 7 malnutrition
DEFINITIVE SCORES for FRAILTY PHENOTYPE ASSESMENT	
Handgrip	no frailty intermediate or pre-frail frail
Gait speed	
CESD (center for epidemiologic studies depression scale)A-B	
Minnesota leisure activity	
Weight loss	

Multidimensional
Geriatric
Assessment

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METHODS

▪**Acute toxicity** was evaluated by RTOG scale up to three months of the end of treatment.

▪ An analysis of correlation between the baseline **Charlson Comorbidity Index score** calculated for each patient and **acute RT toxicity** was performed.

Weight	Conditions
1	Myocardial infarction
	Congestive heart failure
	Peripheral vascular disease
	Cerebrovascular disease
	Dementia
	Chronic obstructive disease
	Connective tissue disease
	Ulcer disease
	Mild liver disease
	Diabetes mellitus
2	Hemiplegia
	Moderate/severe renal disease
	Diabetes with end-stage organ damage
	Any tumor
	Leukemia
	Lymphoma
3	Moderate/severe liver disease
6	Metastatic solid tumor
	AIDS

Charlson Comorbidty Index Score

RESULTS

▪ A total of **130 patients** who started and completed the treatment with curative intent with at least one follow-up visit (3 months) was evaluated. G8q was administered to these patients.

▪ **47 (36.7%) resulted frail with a baseline G8 score ≤14 (range 4-14); 31 underwent to a multidimensional assessment.**

▪Acute toxicity **grade ≥ 2** was observed in **45 patients (47%). Only 4 patients (3%) reported acute toxicity grade ≥ 3**

Status	N°	(%)
Vulnerable	17	55
Frail	2	6
Fit	12	39

RESULTS

▪ **The associations between CCI score, G8 score and acute toxicity was evaluated.**

▪ Charlson comorbidity index resulted 5, 6 or 7 in 121 patients (93%) and ≥ 8 only in 9 patients (7%).

	Overall	no	yes	p
n	130	34	96	
Age (median [IQR])	79 [75, 91]	79 [75, 91]	79 [75, 91]	0.86
Sex = male (%)	82 (63)	28 (82)	54 (56)	0.007
Surgery = yes (%)	53 (41)	15 (44)	38 (40)	0.69
WBC (median [IQR])	7 [5, 8]	7 [5, 8]	6 [5, 7]	0.27
Lymph (median [IQR])	2 [1, 2]	2 [1, 2]	2 [1, 2]	0.63
Neut (median [IQR])	4 [3, 4]	4 [3, 5]	4 [3, 4]	0.80
PLT (median [IQR])	202 [176, 238]	204 [163, 242]	202 [179, 234]	0.68
Hb (median [IQR])	13 [12, 14]	13 [12, 15]	13 [12, 14]	0.79
BMI (median [IQR])	27 [24, 29]	25 [23, 28]	27 [24, 29]	0.07
G8 Baseline (median [IQR])	15 [14, 16]	15 [14, 16]	15 [14, 16]	0.46
Frailty Baseline (%)				0.60
Fit	12 (9)	4 (12)	8 (8)	
Frail	2 (2)	1 (3)	1 (1)	
Vulnerable	17 (13)	5 (15)	12 (12)	
Not Frail	99 (76)	24 (71)	75 (78)	
G8 Baseline (median [IQR])	13 [11, 14]	13 [11, 15]	13 [11, 14]	0.47
G8 Post-RT (median [IQR])	15 [14, 16]	15 [14, 16]	15 [14, 16]	0.42
Comorbidity number (median [IQR])	2 [1, 3]	2 [1, 3]	2 [1, 2]	0.95
Comorbidity number (%)				0.80
0	10 (8)	4 (12)	6 (6)	
1	41 (32)	9 (26)	32 (33)	
2	45 (35)	11 (32)	34 (35)	
3	25 (19)	8 (24)	17 (18)	
4	8 (6)	2 (6)	6 (6)	
5	1 (1)	0 (0)	1 (1)	
Radiotherapy Intent (%)				0.11
Adiuvant	47 (36)	9 (26)	38 (40)	
Neoadiuvant	15 (12)	2 (6)	13 (14)	
Exclusive	68 (52)	23 (68)	45 (47)	
Total dose (median [IQR])	5500 [5000, 7000]	5000 [4001, 6600]	5500 [5000, 7000]	0.03
Chemotherapy Baseline = yes (%)	88 (68)	22 (65)	66 (69)	0.67
CCI score (median [IQR])	6 [5, 6]	6 [5, 6]	6 [5, 6]	0.43

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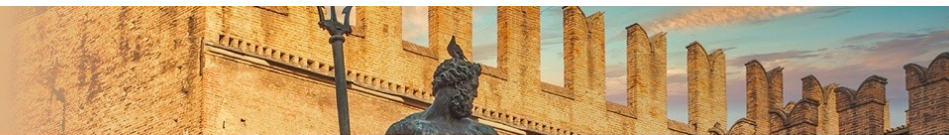
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TAKE HOME MESSAGES

✓ The study is currently ongoing.

✓ **G8 Questionnaire** represented a practical assessment tool to identify frail patients.

✓ The **multidisciplinary approach** in vulnerable and frail patients resulted useful in order to improve the compliance to the treatment without increased toxicity, avoiding that the patient resulted undertreated

✓ The treatment in our population was well tolerated.

✓ Our analysis **did not show a correlation** between CCI score and acute toxicity in elderly patients ≥75 years, confirming a strong message: **NOT undertreating this setting of patients BUT with objective evaluation method!!!**

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GRAZIE DELL'ATTENZIONE