

Results

- A total of **663 patients** have been enrolled to date in 13 Hospitals from Catalonia, Castilla León, Madrid, Galicia, Navarra and Castilla La Mancha
- In this report, we present the preliminary data of the first **205 patients** enrolled

In the present work, we aim to study the patterns of Radon exposure in a preliminary cohort of the first 205 patients enrolled in MIRROR.

This is an observational **prospective multicentric** study with patients diagnosed with all stages NSCLC enrolled in 13 hospitals across 7 different regions in Spain, from January 2021 to the present. After signing informed consent:

- Each patient received 1 or 2 alpha-track detectors to measure Rn levels in their home for a minimum period of 3 months (mo.) and a questionnaire to collect demographic, lifestyle, smoking habit and environmental/occupational exposure
- Clinical, pathological and molecular data are prospectively collected
- Tissue sample was collected for translational Research, for characterization of the immune TME by morphology, immunohistochemistry, and comprehensive genomic analyses.

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graph TD
    A[Inclusion Criteria] --> B[Informed consent]
    B --> C[Pre-test evaluation]
    B --> D[Clinical data]
    C --> E[Tissue sample]
    D --> E
    E --> F[In situ TUN]
  
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Inclusion Criteria

Patients with all stages NSCLC

- New diagnosis
- Under therapy
- Under follow-up

Tissue available:

- Tumor block

Informed consent

Pre-test evaluation

- Radiotherapy
- Chemotherapy
- UVE
- Capecitabine + Erlotinib

Clinical data

- Clinical data
- Pathological data
- Molecular data

Tissue sample

- In situ TUN

Primary or biopsy tissue profiling in patients with NSCLC according to the exposure

Figure 2. Design of the I/BRCA study.

Patients characteristics, (N=205)	
Sex, N (%)	
Female	81 (41%)
Male	121 (59%)
Age	
Median (range)	68 (40 – 90)
Smoking status, N (%)	
Never smoker	70 (34%)
Current & former smoker	129 (63%)
Missing	6
Histology, N (%)	
Adenocarcinoma (adeno)	172 (84%)
Squamous cell carcinoma (SCC)	28 (14%)
Others	5 (2%)
Cancer stage, N (%)	
Localized	84 (41%)
Locally advanced	50 (25%)
Advanced	70 (34%)
Missing	1
PD-L1, N (%)	
≥50%	41 (20.5%)
1 – 49%	41 (20.5%)
Negative	56 (29.0%)
Missing	60

Table 1: Baseline characteristics of the study population

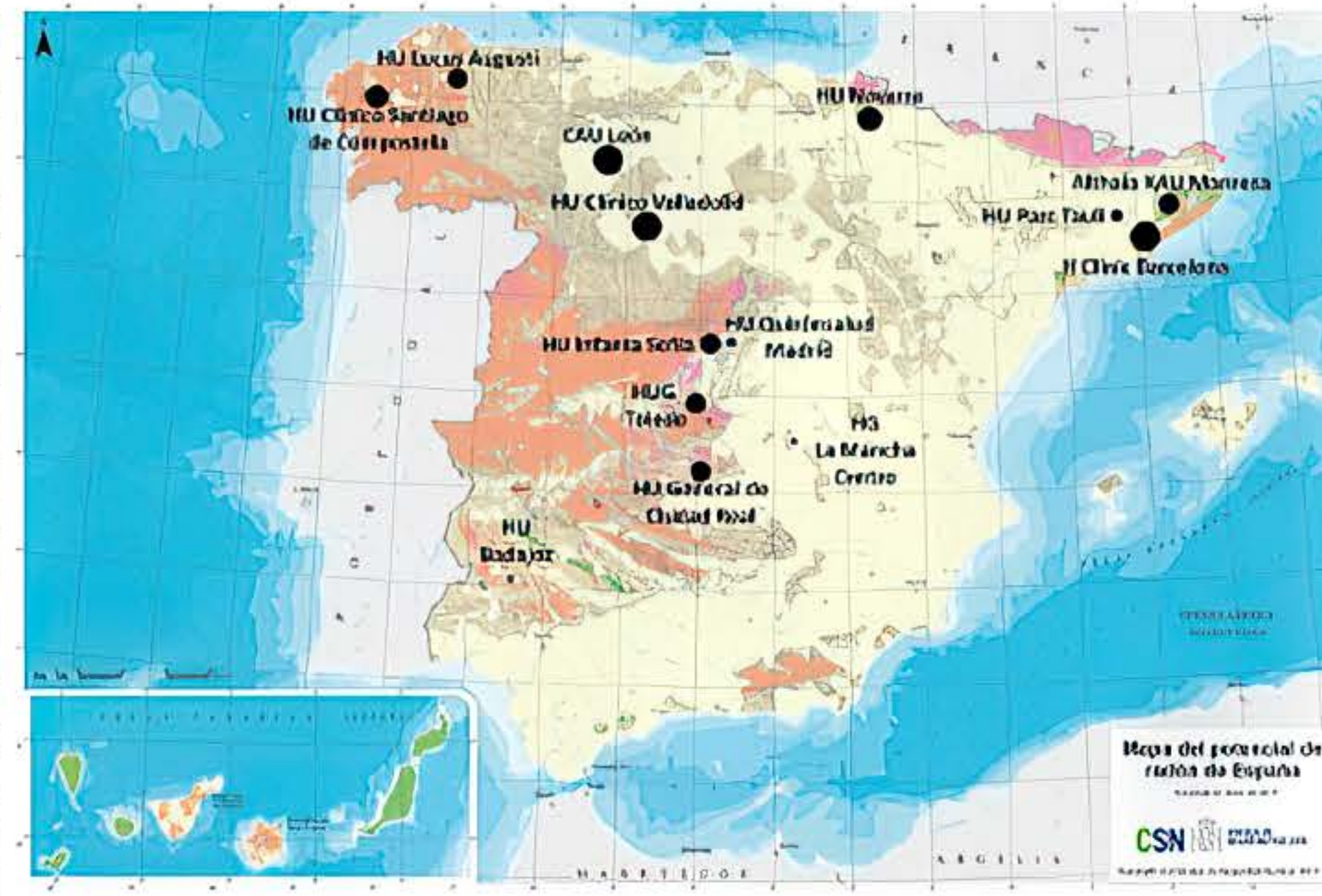


Figure 2: IZOD Map in Spain showing the centers participating in the MIFOR study. Source (Map): Consejo de Seguridad Nuclear

Level of knowledge about Radon

- Around 53% of patients with laryngeal cancer did not know radon before enrolment in the MIRROR study

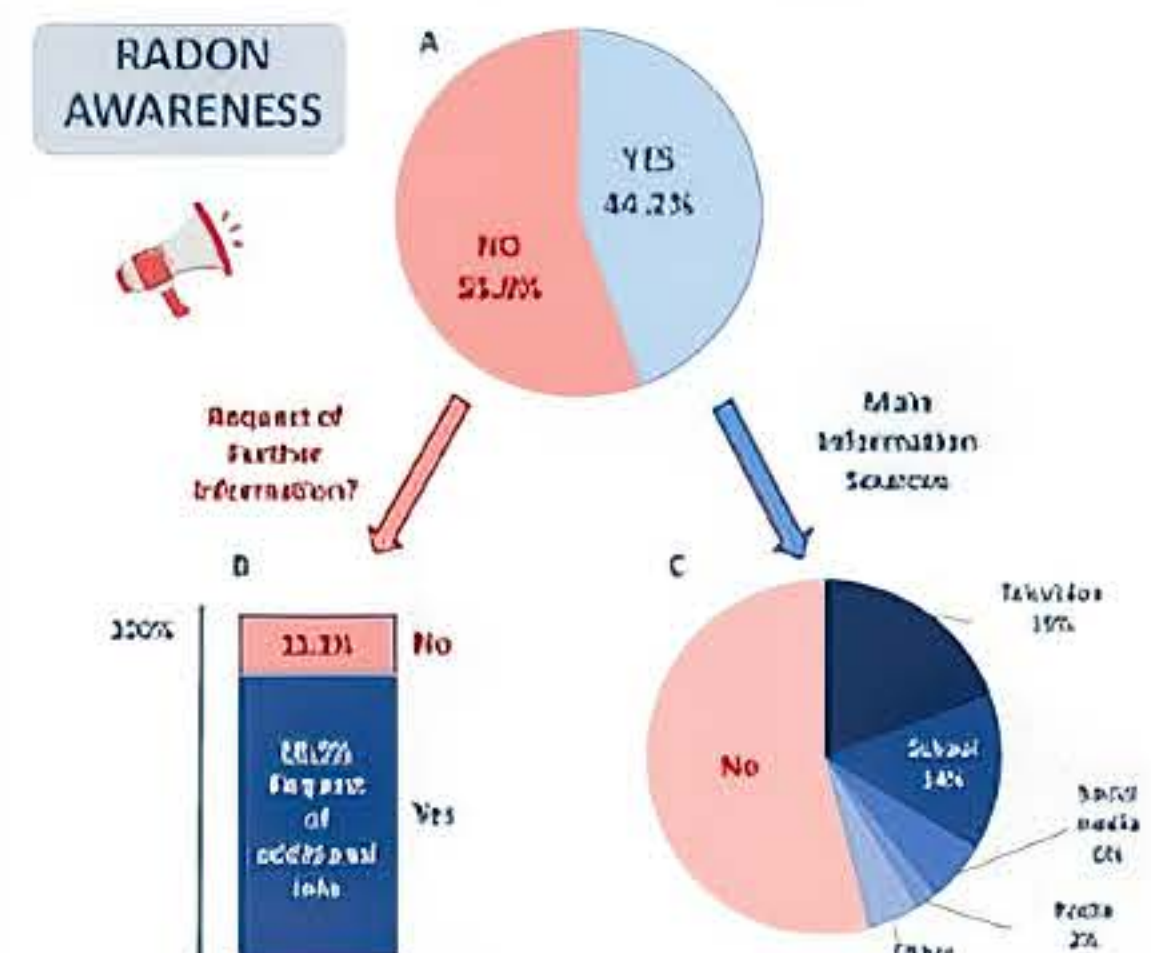


Figure 3. A) Level of awareness about radon in the study population; B) Request of additional information in the subgroup with no previous knowledge about radon; C) Main sources of information in the subgroup with previous knowledge about radon.

Home characteristics

- Most of the patients living in an apartment
- The upper arms and prophary areas were predominant (83%)
- The majority of the population lived more than 20 years in the house where radon was measured
- Higher Rn levels were observed on ground and 1st floor

Home characteristics, N=200 (%)	
Location	
Urban	170 (51%)
Rural	62 (20%)
Periphery	25 (12%)
Mixing	6
Type of house	
Apartment	125 (62%)
Attached house	47 (28%)
Detached house	10 (15%)
Mixing	3
Time living in the current house	
<10 years	36 (16%)
10-20 years	11 (15%)
>20 years	158 (67%)

Table 2: Micro characteristics of the three populations



Figure 4. A) Distribution of the study population according to the floor of their houses, B) Boxplot distribution of the birds by floor

RADON LEVELS: PATIENTS WITH NSCLC

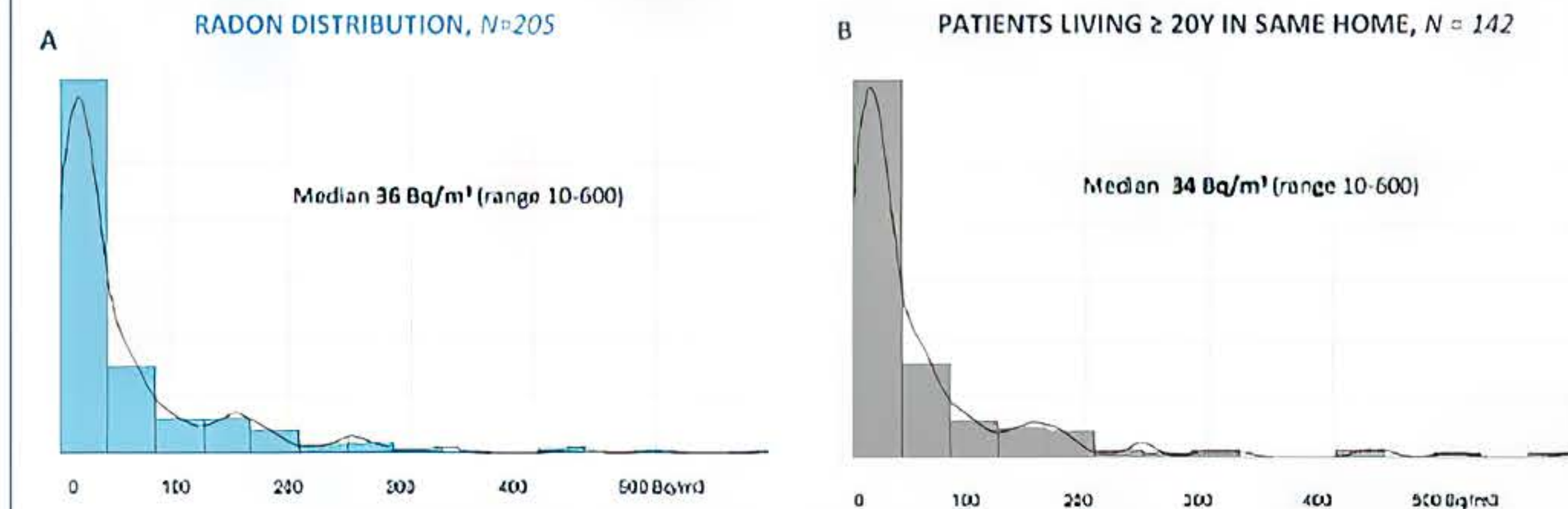


Figure 5: A) Histogram of fin levels in the overall population. **B)** Histogram of fin levels in population living in their homes > 20 years

RADON LEVELS BY REGION IN SPAIN

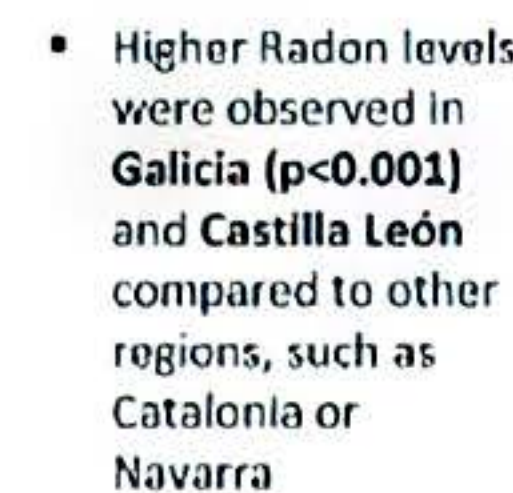
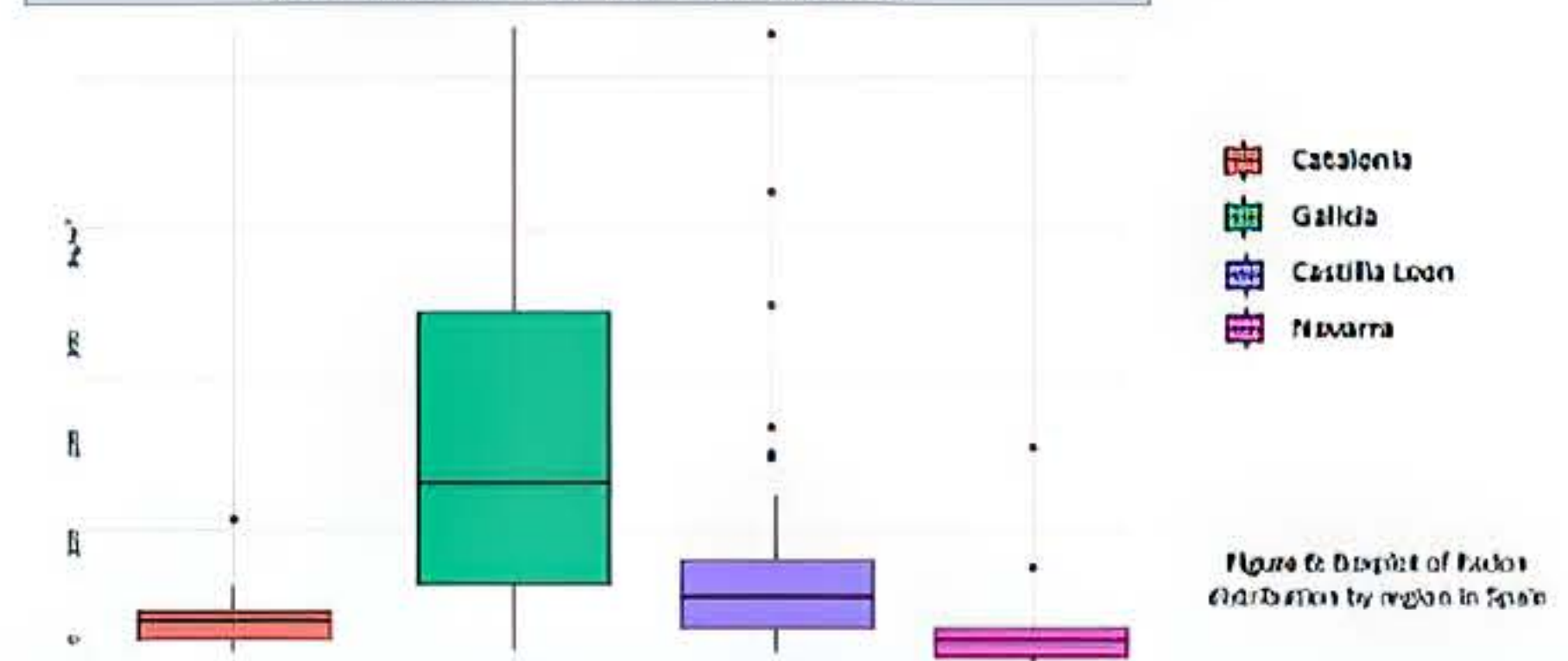


**Figure 6. Distribution of Excess
Chlorination by region in Spain**

RADON LEVELS ACCORDIG TO PATIENTS DATA

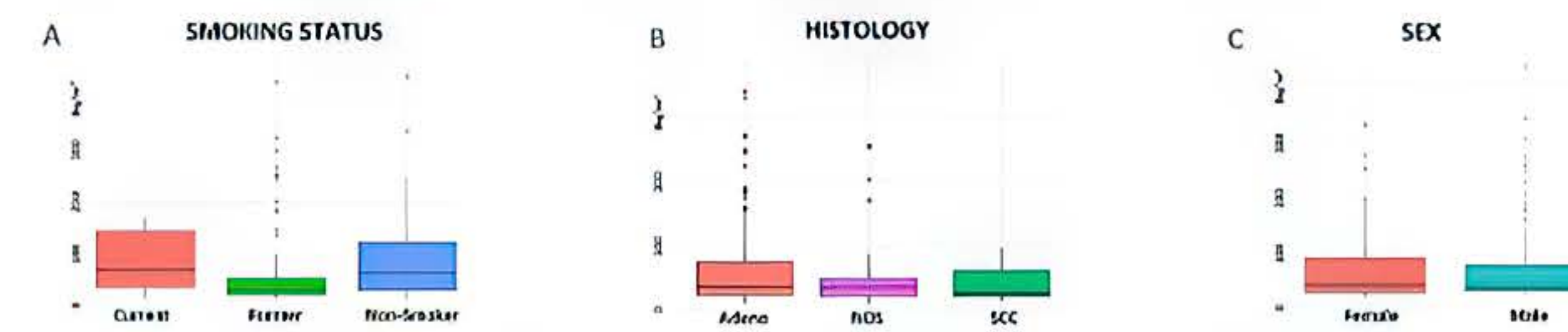


Figure 7: A) Boxplot of radon levels according to smoking status; B) according to histology; C) according to sex

Conclusions

- **Most patients in this study were unaware of Radon**, a prevalent risk factor for lung cancer in Spain; however after the enrolment in MIRROR, the majority of them were interested in obtaining more information about Radon
- The **measurement of indoor Rn is feasible** in patients with NSCLC, with **20.1% of patients homes with $\geq 100 \text{ Bq/m}^3$** and 7.2% $\geq 200 \text{ Bq/m}^3$, providing valuable data for cancer prevention.
- This study is still ongoing to study the Rn-associated profile in a larger cohort of patients.