CAN TUBERCULIN SKIN TEST BE INFLUENCED BY SKIN THICKENING IN SYSTEMIC SCLEROSIS?

Bárbara Fernandes Esteves[1], Miguel Correia Natal[1], Georgina Terroso[1], Lúcia Costa[1], Raquel Miriam Ferreira[1]

1. Rheumatology Department, Unidade Local de Saúde de São João, Porto, Portugal

barbarafernesteves@gmail.com
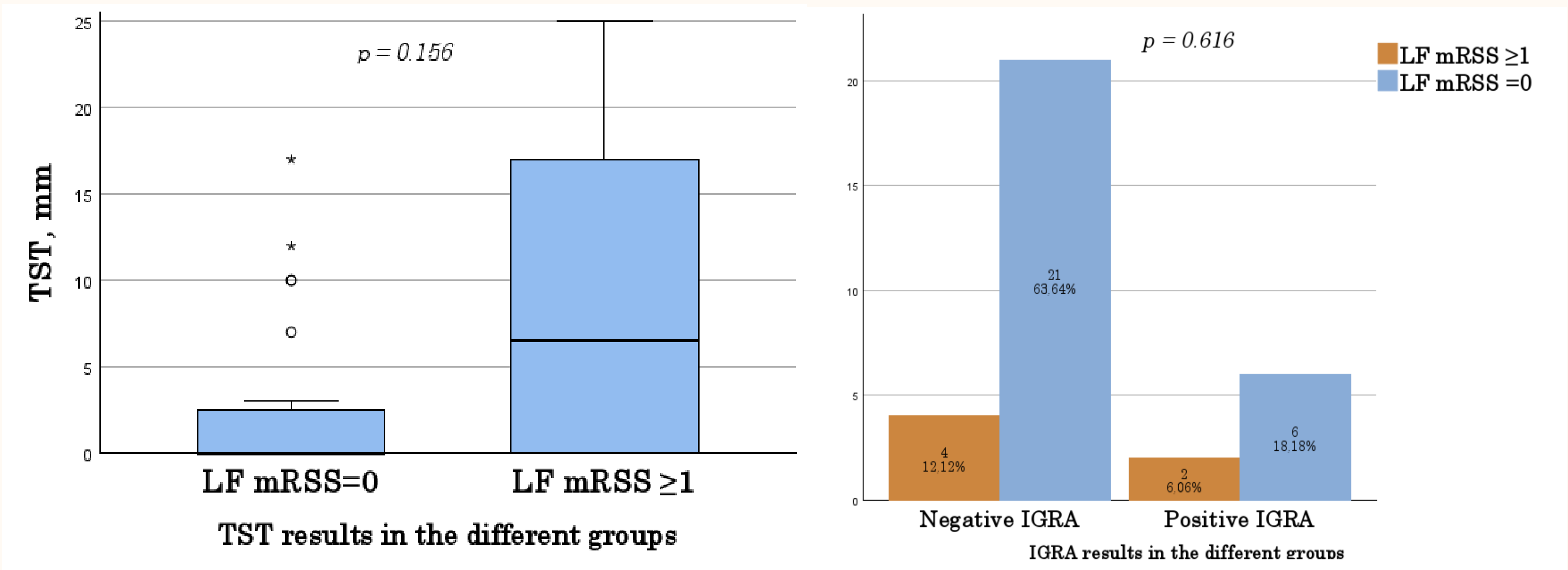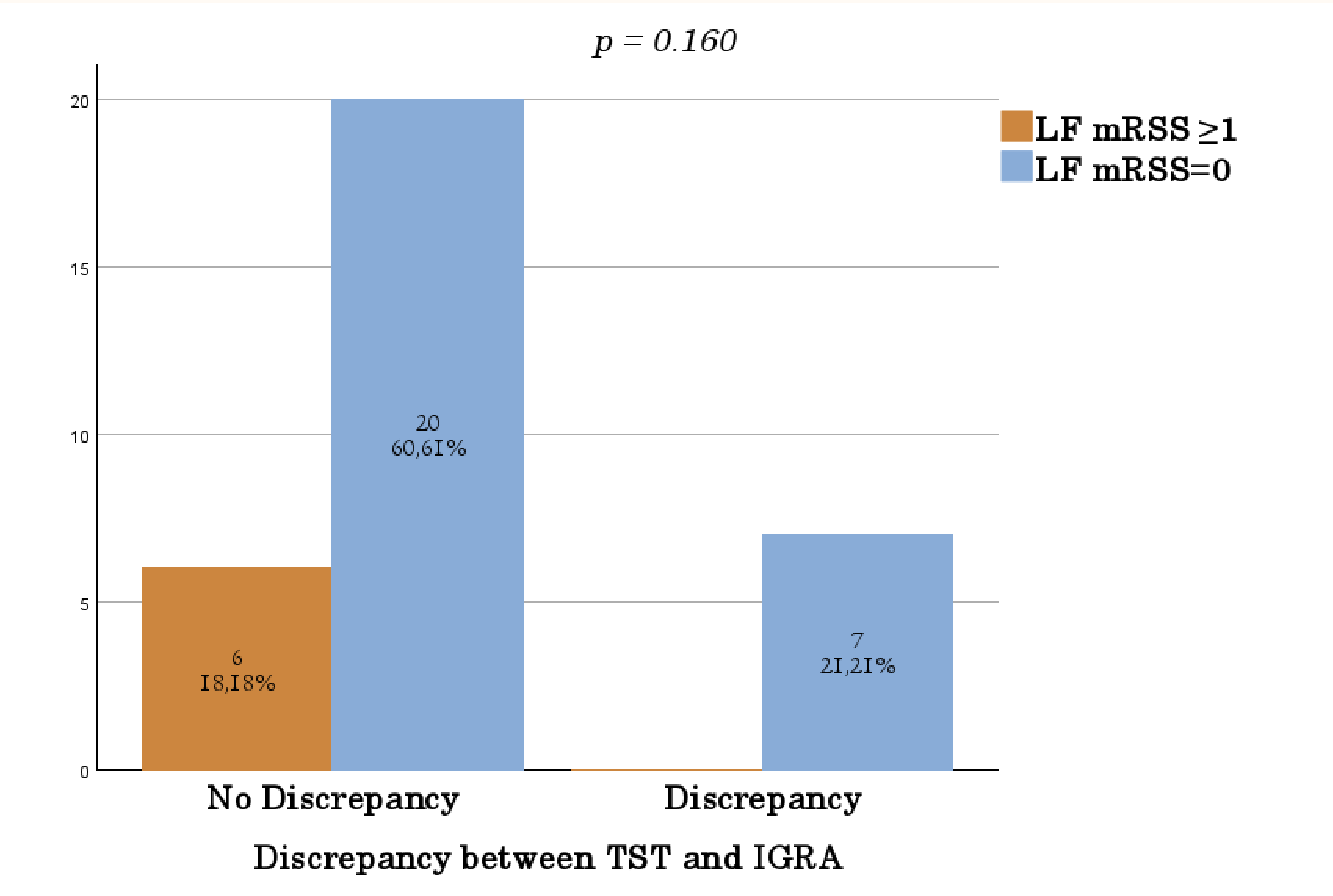www.linkedin.com/in/barbara-fernandes-esteves

INTRODUCTION

Systemic sclerosis (SSc) is characterized by **skin thickening**, measured using the **modified Rodnan Skin Score** (mRSS).
Latent tuberculosis infection (LTBI) screening is essential before starting immunosuppressive therapy and can be performed using the **tuberculin skin test** (TST) or the **interferon-gamma release assay** (IGRA). Although ≥10mm is the general cut-off, alternatives have been proposed ranging from ≥5 to ≥15 mm.

> We aim to evaluate the possible link between skin thickening at the inoculation site and the TST result and assess if a different cut-off is needed for SSc patients.
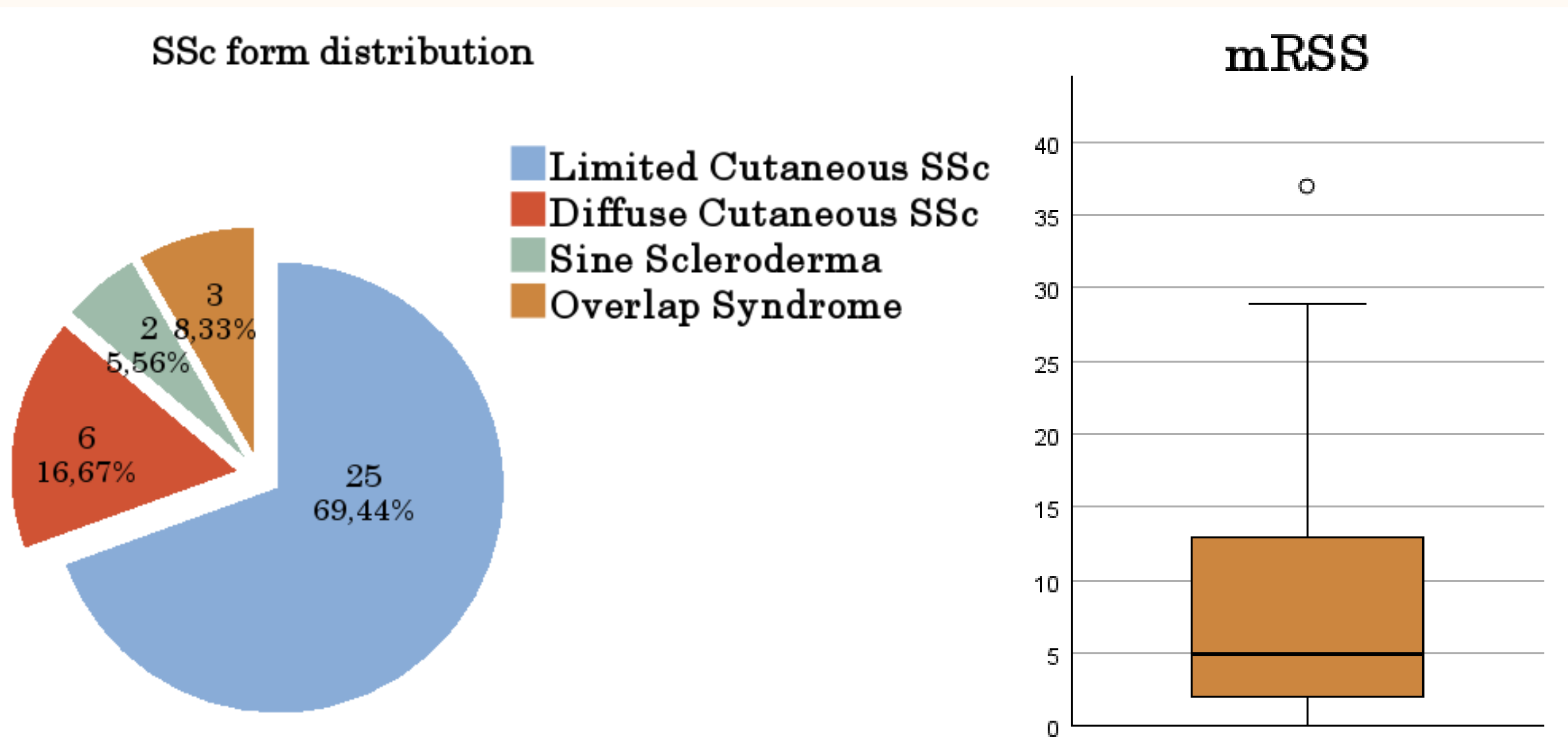
METHODS

We conducted a **retrospective observational study** including all **adult SSc** patients from our center who had **recent TST or mRSS evaluation**. We considered the **TST cut-off of ≥10 mm**.
Patients were divided into **two groups** based on the **mRSS in the inoculation site** (left forearm): **LFmRSS≥1 and LFmRSS=0**.
Clinical characteristics and LTBI screening results were compared between the groups.

p = 0.160
Discrepancy between TST and IGRA

p = 0.156
TST results in the different groups

p = 0.616
IGRA results in the different groups

RESULTS

A total of **36 patients** were included in the study, of whom **30 (83.3%)** were female, with a mean age of **62.2years** (SD 10.33) and a **median disease duration of 10.0years** (IQR 20.0). The **median mRSS was 5.0 (IQR 12.0).**

SSc form distribution / mRSS

No significant differences were observed between the LF mRSS ≥1 and the LF RSS=0 groups for TST (p=0.156), IGRA (p=0.616), and assumed LTBI (p=0.433).

> The concordance rate between TST and IGRA was 72.2%. All patients with discrepancy belonged to the LFmRSS=0 group.

	LF mRSS ≥1 N = 8	LF mRSS =0 N =28	Total N = 36	P-value
Age, years, Mean (SD)	59.9 (11.5)	62.5 (10.64)	62.2 (10.33)	0.614
Gender, N (%)				
Female	4 (50%)	26 (92.9%)	30 (83.3%)	*0.004*
Male	4 (50%)	2 (7.1%)	6 (16.7%)	
ES form, N (%)				
Limited Cutaneous ES	3 (37.5%)	22 (78.6%)	25 (69.4%)	
Diffuse Cutaneous ES	5 (62.5%)	1 (3.6%)	6 (16.7%)	*0.001*
Sine Scleroderma	0	2 (7.1%)	2 (5.6%)	
Overlap Syndrome	0	3 (10.7%)	3 (8.3%)	
ES duration, years, Median (IQR)	10.0 (19.0)	10.0 (19.0)	10.0 (20.0)	*0.949*
mRSS, Median (IQR)	22.0 (21.0)	3.5 (4.0)	5.0 (12.0)	***<0.001***
TST, mm, Mean (SD)	9.0 (10.29)	2.3 (4.54)	3.8 (6.72)	*0.156*
IGRA, N (%)				
Positive	2 (33.3%)	6 (22.2%)	8 (24.2%)	*0.616*
Negative	4 (66.7%)	21 (77.8%)	25 (75.8%)	
Assumed LTBI, N(%)				
Yes	4 (50.0%)	9 (33.3%)	13 (37.1%)	*0.433*
No	4 (50.0%)	18 (66.7%)	22 (62.9%)	
Discrepancy between TST and IGRA. N (%)				
Yes	0	7 (25.9%)	7 (21.2%)	*0.160*
No	6 (100%)	20 (74.1%)	26 (78.8%)	
BCG vaccination, N(%)				
Yes	3 (37.5%)	4 (14.8%)	7 (20.0%)	*0.312*
No	5 (62.5%)	23 (85.2%)	28 (80.0%)	
PDN, N(%)				
Yes	2 (25.0%)	9 (32.1%)	11 (30.6%)	*1.000*
No	6 (75.0%)	19 (67.9%)	25 (69.4%)	
PDN dose, mg/day, Median (IQR)	8.7	5.0 (3.8)	5.0 (5.0)	*0.145*

mRSS: modified Rodnan skin score; LF: Left Forearm; TST: Tuberculin Skin Test; IGRA: Interferon-gamma assay; LTBI: Latent Tuberculosis Infection; BCG: Bacillus Calmette-Guérin; PDN: prednisolon

CONCLUSION

Our results suggest that skin thickness does not influence TST results.
Treatment with **PDN did not appear to influence the TST results**, likely due to the low doses used in SSc to prevent complications such as scleroderma renal crisis.
Most patients showed **concordance between the TST and IGRA**. Thus, **TST can be effectively used and the ≥10mm cut-off can be applied in SSc patients for LTBI screening.**

N.º 431