

Systemic Sclerosis in Asian vs. Non-Hispanic White Patients: A Comparative Study of Disease Characteristics and Serological Findings

INTRODUCTION

- **Systemic sclerosis (SSc)**: Rare autoimmune disease that has particularly high mortality in Asians
- **Clinical features**: Skin tightening, Raynaud's phenomenon, digital ulcers, myositis, arthritis; GI, cardiovascular, renal and lung involvement
- **Interstitial Lung Disease (ILD) is #1 cause of mortality**
- **Subtypes**: Limited vs. Diffuse differentiated by extent of skin tightening (Figure 1) with early, more severe internal organ involvement in Diffuse
- **Specific serologies associated with SSc**: ANA, ACA (Limited, PH), Scl70 (Diffuse, ILD), RNAPolIII (Diffuse, renal crisis), and U1RNP (overlap features)
- **Study Aim**: Examine the clinical manifestations and autoantibodies of SSc in Asians vs. Non-Hispanic Whites (NHW)

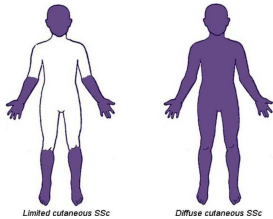


Figure 1: Limited vs diffuse cutaneous subtype of SSc

METHODS

- **Retrospective cohort study** that includes 338 patients from the Stanford SSc database from 2007-2022
- Self reported races including:
 - NHW, Black, Asian, Hispanics, others
 - Mixed races excluded
- Statistical significance was assessed using chi-squared test and t-tests with $p < 0.05$ considered significant
- R studio v 4.4.0 used for analyses

RESULTS

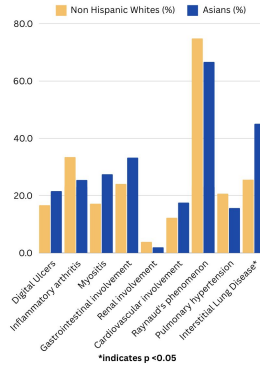


Figure 2: Organ involvement of SSc in NHW vs Asian patients

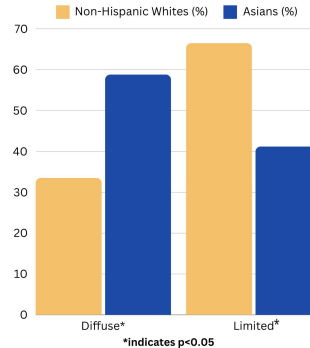
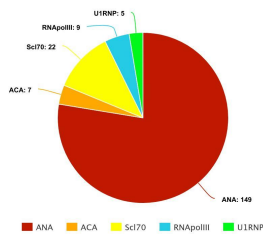


Figure 3: Cutaneous subtypes in Asian vs NHW patients diagnosed with SSc

Distribution of autoantibodies in Non-Hispanic Whites with SSc



Distribution of autoantibodies in Asians with SSc

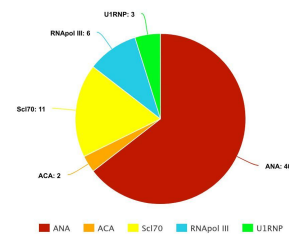


Figure 4: Presence of different autoantibodies in Asian and NHW patients diagnosed with SSc

- Asians were more likely to have **never smoked** (89% vs. 70%, $p=0.01$) and had **shorter disease duration** (median (IQR) 1018 (2340) days vs. 2510 (4112)) at the time of enrollment into the database.
- Asians had a **higher frequency of diffuse SSc** (59% vs. 34%, $p=0.002$).
- Asians had a **higher frequency of ILD** (45% vs. 26%, $p=0.01$).
- Asians had **trends toward a higher frequency of SCL70** (22% vs. 11%, $p=0.07$) and **RNA polymerase III** (12% vs. 4%, $p < 0.1$).

DISCUSSION

Major findings:

- **Asians have a higher frequency of diffuse disease and ILD despite being more likely to have never smoked compared with NHWs.**
- Asians have a higher frequency of SCL70 and RNA polymerase III autoantibodies than NHWs but this did not reach statistical significance.

Limitations:

- Retrospective cohort study with unavoidable missing data
- Small single center study
- Self reported race from patients may lead to misclassification

Conclusions:

ASIANS SSC PATIENTS HAVE A MORE SEVERE CLINICAL PHENOTYPE THAN NHW AND MAY BENEFIT FROM AGGRESSIVE SCREENING AND MONITORING FOR PROGRESSIVE SKIN AND INTERSTITIAL LUNG DISEASE.

Future directions:

- Additional studies are planned to evaluate the outcomes of SSc among Asians versus NHWs and other races

ABSTRACT AND REFERENCES

