CONFERINȚA ȘTIINȚIFICĂ ANUALĂ *CERCETAREA ÎN BIOMEDICINĂ ȘI SĂNĂTATE: CALITATE, EXCELENȚĂ ȘI PERFORMANȚĂ*
19 21 octombrie 2022

IMAGING PHENOTYPES IN SARCOIDOSIS

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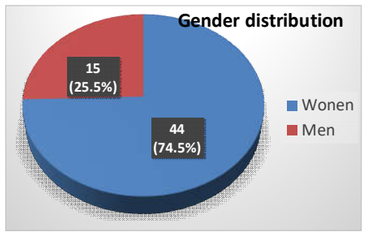
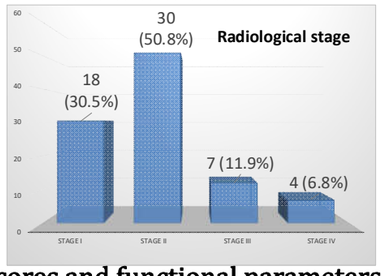
Introduction

Sarcoidosis is a multisystem inflammatory granulomatous disease of unknown etiology characterized by an extremely broad spectrum of imaging patterns that are usually preserved throughout the course of the disease, which in fact gives it a particular imaging phenotype.





Correlations between HRCT subscores and functional parameters HRCT score system

	Thickening of the broncho-vascular bundle	Parenchymal consolidation	Intra-parenchymal nodules	Septal/ non-septal lines	Focal pleural thickening	Lymph node enlarge-ment
FEV1	**-0,34****	-0,16	-0,12	**-0,38****	**-0,31****	0,04
FVC	-0,23	-0,19	-0,13	**-0,29***	**-0,32****	0,01
DLCO	**-0,26***	**-0,41****	**-0,36****	**-0,53****	-0,12	0,10
$MMEF_{25-75}$	-0,21	-0,17	**-0,27***	**-0,31****	**-0,26***	0,14
TLC	-0,13	-0,07	0,02	-0,16	**-0,26***	-0,09

*** p<0,05; ** p<0,001**

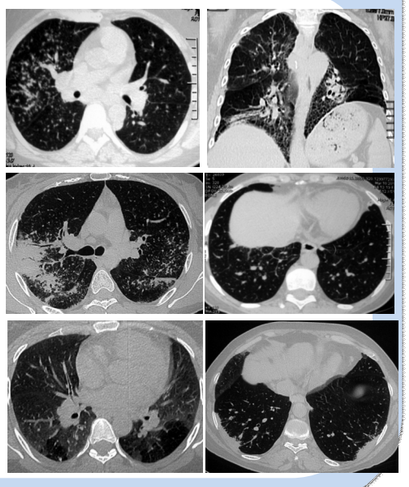
All HRCT subscores except mediastinal adenopathy correlated with changes in FEV1, FVC, MMEF25-75, and DLCO ($p<0.05$).

Aim

Analysis of imaging phenotypes in pulmonary sarcoidosis.

Results

- mean age of 51±7.9 years
- Typical HRCT pattern – 49%
- Mean HRCT score – 8,6 ±4.9
- **6 main HRCT phenotypes:**
  - micronodules – 19
  - consolidation - 9
  - ground glass - 5
  - fibrotic phenotype - 4
  - interlobular reticulation - 16
  - PPFE-like pattern - 6



Conclusions

Typical patterns are found in about ½ patients.
There is a direct correlation between imaging phenotypes and functional disorders, with better scores for the CT phenotype model.

Material and methods

We analyzed 59 patients from Chiril Draganiuc Institute of Phtisiopneumology, who were evaluated for pulmonary sarcoidosis, during year 2021.
Among the retrospectively collected data were: clinical history, functional respiratory tests and imaging data. HRCT imaging score was assigned to each patient. The presence of correlations between imaging scores and functional disorders were determined.

CT phenotypes correlation with lung function parameters

	Nodules	Consolidation	Ground glass	Reticulation	PPFE – like pattern	Fibrotic phenotype
FEV1	**-0,34****	**-0,29***	**-0.42****	-0,16	-0,31	- 0,04
FVC	-0,23	**-0,49****	-0,13	**-0,29***	**-0,32****	**- 0,67****
DLCO	**-0,26***	**-0,54****	**-0,36****	**-0,49****	**-0,22***	**- 0,68****
$MMEF_{25-75}$	-0,21	-0,17	-0,27	-0,27	-0,16	0,14
TLC	-0,13	**-0.31***	0,02	-0,16	**-0,26***	**-0,48***

*** p<0,05; ** p<0,001**

The CT phenotypes showed a better correlation with all functional parameters, with moderate correlation scores associated with **consolidation** and **fibrotic phenotype.**