Interferon γ release assays are useful to exclude M.tuberculosis infection in sarcoidosis patients with positive tuberculin skin test

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Abstract

Both sarcoidosis and tuberculosis are similar in their radiological and histological pictures. Sometimes it is difficult to distinguish between these two diseases. Tuberculin skin test (TST) is helpful in differential diagnosis. There is tuberculin anergy in sarcoidosis, and most patients have negative TST. There is a group of sarcoidosis patients with positive TST. In countries with high incidence of tuberculosis, positive TST in sarcoidosis-suspected patients indicates rather for tuberculosis. This is more complicated in BCG vaccinated populations, because BCG vaccination might be the cause of TST positivity.

Poland is the country with moderate incidence of TB and circa 20% of the population is infected with MTB.

BCG vaccination is obligatory since early 50-ties. Over 90% of the population is vaccinated.

We used two commercially available interferon gamma release assays (IGRAs) to verify the value of positive TST in BCG vaccinated patients with pulmonary sarcoidosis.

34 patients (12 female, 22 male; mean age 36.6±9.5) with newly diagnosed sarcoidosis were included in this study. 7/8 (87.5%) of TST positive patients were BCG vaccinated as was proven by the presence of the scar. The blood samples for both commercial IGRA (Quantiferon TB Gold and T-SPOT.TB) were collected directly before tuberculin testing.

TST was negative in 26 (76.5%) and positive in 8 (23.5%) of 34 patients. There were no differences in age and sex between these two groups. Both tests: QFT and T-SPOT.TB were negative in all TST positive as well as TST negative sarcoidosis cases.

Aim of the study

The aim of the study was:

1.to evaluate diagnostic utility of two comercially available IGRAs (Quantiferon TB Gold and T-SPOT.TB) to verify positive TST in BCG vaccinated patients with pulmonary sarcoidosis in the country with moderate incidence of TB

2.to asses agreement between these two IGRAs in sarcoidosis patients

Material and methods

The study protocol was approved by Local Ethic Commission. All participants signed written consent.

34 patients with newly diagnosed pulmonary sarcoidosis were enrolled in the study .

Diagnosis of sarcoidosis was established according to ATS/ERS/WASOG statement on sarcoidosis.

None of the participants were under steroid or other immunosuppressive therapy.

n=34	
Age(mean±SD)	36.9±9.5
Sex Women Men	 12 (35.3%) 22 (64.7%)
Stage: I II III IV	 14 (41.2%) 18 (52.9%) 2 (5.9%) 0 (0%)

1. Blood sample for QFT and T-SPOT.TB were obtained first. Tests were performed according to manufacturer's recommendations.

2. TST was done according to the Mantoux technique with 2 IU of PPD-RT 23 and read after 72 hours.

Results

	TST total n=34		
	negative n=26	**positive** n=8	**p-value**
Age (yr)	37.5±9.49	34.1±9.1	0.38
Sex M/F	17/9	5/3	0.88
Stage I/II/III/IV	10/14/2/0	4/4/0/0	0.66

IGRA / **TST**	**QFT negative** < 0,35 IU/ml	**TSPOT.TB negative** ESAT6/CFP10<6	**Both IGRAs negative**
Negative (n)	26	26	26
Positive (n)	8	8	8
TOTAL (n,%)	34 (100)	34 (100)	34 (100)

Conclusions

1.Positive TST in sarcoidosis patients is not related to M.tuberculosis infection in Poland- country with moderate incidence of TB.

2.There is excellent agreement between two IGRAs.

3. According to our knowledge this is the first study where two IGRAs were used simultaneously in sarcoidosis patients. Limitation of the study was small group - we suggest futher large scale study on this subject.