



## STUDY OF CLINICO-PATHOLOGICAL PROFILE OF SARCOIDOSIS IN A TERTIARY CARE HOSPITAL IN NORTHERN INDIA .

### General Medicine

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### ABSTRACT

**Background :** Sarcoidosis is an ill-defined syndrome of unknown etiology involving abnormal collection of chronic inflammatory cell (granulomas) that can form as nodules in various organs . Sarcoidosis most commonly affects young adults of both sexes, although studies have reported more cases in females. The etiology of Sarcoidosis has yet to be attributed to a single factor. The cause of sarcoidosis is still obscure, continues to elude us and remains an enigma. It is also not clear whether sarcoidosis is caused by a single agent, several related agents, or multiple factors.

**Materials and methods:** The present study was carried out in Post Graduate department of Internal Medicine, Government Medical College, Jammu for a period of one year from November 2013 to October 2014. Patients were recruited from indoor wards of general medicine, indoor wards of pulmonology units, outpatient clinics, pulmonology clinics and emergency department of Government Medical College for a period of one year.

**Results:** In our study we found cough to be the most common symptom (93.3%) followed by dyspnea (80%) and chest pain in (66.67%) of patients. In our study, cutaneous involvement was seen in 13.3% patients and none of the patients had erythema nodosum. Arthralgias were more common than arthritis in our patients.

### KEYWORDS

Sarcoidosis, granulomas, cough, serum ACE levels, dyspnea.

**INTRODUCTION:** Sarcoidosis is an ill-defined syndrome of unknown etiology involving abnormal collection of chronic inflammatory cell (granulomas) that can form as nodules in various organs.

The etiology of Sarcoidosis has yet to be attributed to a single factor. The cause of sarcoidosis is still obscure, continues to elude us and remains an enigma. It is also not clear whether sarcoidosis is caused by a single agent, several related agents, or multiple factors. The disease is often self limited however some cases with severe disease and multi organ involvement may have significant debilitation and can even be life threatening. Mortality from sarcoidosis is usually caused by respiratory failure approaches 1- 5% **Hung CT et al. 1981(1)**. Sarcoidosis most commonly affects young adults of both sexes, although studies have reported more cases in females. Incidence is highest for individuals younger than 40 and peaks in age group from 20 – 29 years, a second peak is observed for woman over 50 years. **Lee SK et al. 1985(2)** studied eight cases of pulmonary sarcoidosis in an institute in Singapore. Hilar adenopathy was the principal radiological finding in six of them. The study done by Lee showed, although sarcoidosis is rare among Asians, especially among Indian and Chinese, but an increase in prevalence can be reported in near future. **Joseph K.T. lee 2004(3)** studied about abdominal sarcoidosis and found that liver, spleen and lymph nodes were the most common organ involved. The most common radiographic finding of hepatic sarcoidosis was hepatomegaly (either homogenous or nodular). It is a world wide disease that mainly effect 25-40 years old people with a life time incidence rate of 0.85-2.4%. Multiple clinical phenotypes are observed according to presentation, disease duration and severity. Sarcoidosis primarily effects the lungs and the lymphatic system. Evolution of sarcoidosis is often marked by spontaneous resolution with in 12-36 months, but can be severe because of chronic cases with pulmonary fibrosis.

**METHODS AND MATERIALS :** The present study of “Clinical profile of sarcoidosis patients” was carried out in Post Graduate department of Internal Medicine, Government Medical College, Jammu for a period of one year from November 2013 to October 2014.

#### Subjects /Patients population

Patients were recruited from indoor wards of general medicine, indoor wards of pulmonology units, outpatient clinics, pulmonology clinics and emergency department of Government Medical College for a period of one year. All eligible patients were explained the purpose of study and after getting full consent participated in the study.

#### Inclusion criteria

1. Age >18 years

2. Patients having symptoms (Dyspnea, cough, chest pain, skin lesions, eye symptoms, arthritis etc.) highly suggestive of sarcoidosis.
3. Chest X-Ray P/A view showing bilateral hilar lymph adenopathy and reticular nodular shadows.
4. Patients already with a positive biopsy showing non caseating granulomas.

#### Exclusion criteria

1. Age <18 years.
2. Positive Mantoux test.
3. Patients already with a biopsy showing features of some other disease.

All patients were subjected to detailed clinical history and physical examination. Detailed systemic examination of every system was done as per proforma. A detailed history was recorded and physical examination was performed in all the patients at the time of initial presentation. Laboratory investigations including hemogram, chest radiograph, and sputum smear examination for acid fast bacilli, Mantoux test, pulmonary function testing (PFT), electrocardiogram, laboratory tests like serum calcium and serum angiotensin converting enzyme (ACE) levels. Chest radiograph and high resolution computed tomography (HRCT) was performed in most of the patients. Fiberoptic bronchoscopy (FOB) and transbronchial lung biopsy (TBLB) was performed in patients willing for the procedure and if they were physiologically fit. In patients who were either not fit to undergo FOB or refused to undergo the same, the diagnosis was made on clinical, laboratory and radiological features.

### RESULTS AND DISCUSSION:

**Table 1: Showing the Symptoms and Signs**

Symptoms and signs	No. of patients (n=75)	Percentage %
Cough	70	93.30
Breathlessness	60	80.00
Chest pain	50	66.67
Joint involvement	40	53.30
Skin lesions	10	13.30
Eye symptoms	8	10.60
Constitutional symptoms (fever, Fatigue , wt.loss)	25	33.33
Digital clubbing	8	10.60
Crepitations in lungs	38	50.67
Hepatosplenomegaly	30	40.00

The most common presenting symptom was found to be cough being present in 70(93.3%) patients followed by dyspnea in 60(80%), chest pain in 50(66.7%), joint pains in 40(53.3%), fever in 25(33.3%) and skin lesions in 10(13.3%).

On examination ,17(22.6%) patients had digital clubbing and chest crepitations in 34(45.3%) patients. Hepatosplenomegaly was seen in 30(40%) of our patients.

**Table 2: Showing the Laboratory Investigations**

Investigations	No. of patients(n=75)	Percentage %
-ve Mantoux test	75	100.00
Anemia (Hb<12% in males,Hb<11% in females)	30	40.00
Hypercalcemia	30	40.00
Elevated S.ACE levels	40	53.33

Mantoux test was negative in all the patients.

- Hypercalcemia was seen in 40% of our patients.
- Elevated levels of serum ACE were observed in 53.3% of our patients..

**Table 3: Distribution of Patients According to Chest x- ray Staging.**

Chest x-ray staging	No. of patients (n=75)	
	No.	Percentage%
Stage 1 (B/L hilar LAD without parenchymal infiltrates)	38	50.67
Stage 2 (B/L hilar LAD with interstitial infiltrates)	25	33.33
Stage 3 (Diffuse interstitial infiltrates without hilar LAD)	10	13.33
Stage 4 (Diffuse fibrosis)	2	2.67
<b>Total</b>	<b>75</b>	<b>100.00</b>

On radiological staging maximum number of patients (50.67%) had stage 1 disease, followed by stage 2(33.33%), stage3(13.33%), stage 4(2.67%).

**Table 4: Histopathological finding of Biopsy Report**

Biopsy report	No. of patients (n=50)	
	No.	Percentage%
Non-caseating granulomas	40	80.00
Other non-specific findings	10	20.00
<b>Total</b>	<b>50</b>	<b>100.00</b>

In 50 patients we performed fibreopticbronchoscopy and each specimen obtained was sent for histopathological reporting. Non caseating granulomas were seen in 40(80%) of our patients.

**Kumar et al. 2012(4)** observed cough (89.7%) to be the most common presenting symptom. **ATS/ERS/WASOG** also reported dyspnea, dry cough, and chest pain to occur in one third to one half of the patients. In our study we found cough to be the most common symptom (93.3%) followed by dyspnea (80%) and chest pain in (66.67%) of patients. **Sharma SK et al. 2002(5)** found that constitutional symptoms fever, fatigue, malaise, and weight loss to be more common in Indian set up than in patients from west. In our study constitutional symptoms were present in 46.6% of patients.Clubbing was rare (10.6%), which was in accordance with western studies **Lynch JP III et al. 1997(6)**. Lung crepitations were present in fewer than 20% of patients with sarcoidosis in most studies in Western countries **Lynch JP III et al. 1997**, where as in our study we found 50.67% patients to have crepitations. The classical radiographic feature of sarcoidosis is bilateral hilar lymphadenopathy which was seen in majority (90%) of our patients. Similar observations were also reported by **Lee et al. 1985**. In our study, we found abnormal bronchial mucosa in 80% patients. Depending mainly on the experience of the clinician the diagnostic yield of TBLB ranges from 40% to more than 90%. **Gupta et al. 2002(7)** reported the diagnostic yield of TBLB to be 76% where as **Shorr et al. 2001(8)** reported the same to be 59%.

**Conclusions :** This study showed that in region with high tuberculosis burden diagnosing sarcoidosis poses a substantial health challenge. However new cases of sarcoidosis are increasingly diagnosed in Tuberculosis endemic areas in recent years due to increased awareness

and better availability of diagnostic modalities. Also this study showed that sarcoidosis in our region behave differently as compared to rest of the world as shown in various western studies. These variations possibly are incidental findings. However the possible reason for variations may be the different designs of the studies and demographic profile of the study population. Patients having bilateral lymphadenopathy with or without infiltrates should be investigated for sarcoidosis. Negative mantoux test is still an important test to make a diagnosis of exclusion.

Transbronchial lung biopsy has highest diagnostic value in sarcoidosis.

**Conflicts of interest : NONE**

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