

ORIGINAL ARTICLE

SOCIO DEMOGRAPHIC PROFILE AND CLINICAL PRESENTATION OF COLLAGEN VASCULAR DISEASE WITH PULMONARY SYMPTOMS: A DESCRIPTIVE CROSS SECTIONAL STUDY

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ABSTRACT

Introduction: Collagen Vascular Disease presented with varied systemic symptoms including pulmonary symptoms, commonly breathless on exertion; dry cough; cough with expectoration; chest pain; and hemoptysis. The current study was conducted to know socio demographic profile and clinical presentation of patient coming with Collagen Vascular Disease having pulmonary symptoms.

Methodology: This was a descriptive cross sectional study conducted among Collagen Vascular Disease patient coming with pulmonary symptoms in outpatient department.

Results: Among the 50 patients 40% patients were having SC followed by SLE (30%). Most common age group was 31 to 40 year of age followed by 21 to 30 year of age. Both these group contribute more than half of the cases. Eighty percent patients were female with female to male ratio was 4:1. The most common chest symptom in the patients was breathlessness (50%) and fatigue (50%), followed by cough (46%) and chest pain (18%). The most common sign was Crackles (32%) followed by clubbing in 22% of patients.

Conclusion: Female and young - middle age more commonly presented with Collagen Vascular Disease. Most of the patients when presented were having wide-ranging pulmonary symptoms-signs indicating extensive involvement of lung tissues which emphasis need for early diagnosis and treatment.

Keywords: collagen vascular disease, pulmonary symptoms, scleroderma, rheumatoid arthritis

INTRODUCTION

Some diseases have no definite known etiology and have complicated pattern. Collagen Vascular Disease (CVD) is one of them which involve the whole of the connective tissue systems. They origin from degeneration of collagen, ground substance, muscle, fibrin and other plasma proteins. In India common CVDs are Scleroderma (SC); Systemic Lupus Erythmatousus (SLE); Rheumatoid Arthritis (RA); Mixed Connective Tissue Disorder (MCTD); Dermatomyositis / Polymyositis; Sjogrens Syndrom; and Ankylosing Spondylitis.

For most of the connective tissue disorder etiology is unknown. Many theories are proposed by different researchers but most of the scientist does not agreed to a single theory. Genetical, hormonal, environmental and metabolic mechanisms are some of them. However, some researchers also believe multiple or combination

of more than two factors responsible for the causation of CVD.

Almost all the collagen disorders can either controlled or symptomatically relieved. They require persistent and lifelong monitoring as they are progressive or can undergo remissions. The collagen disorders varied systemic symptoms making presentation very wide and difficult to diagnose. Pulmonary symptoms are not uncommon in CVDs and patients reported in chest disease outpatient department. Symptoms commonly found in CVD are breathless on exertion; dry cough; cough with expectoration; chest pain; and hemoptysis.¹⁻⁴

Considering the wide variability in presentation and varied socio-demographic profile, the current study was conducted to know profile of patient coming CVD having pulmonary symptoms. The objective of this study is to know socio-demography and clinical presentation of these patients.

METHODOLOGY

This descriptive cross sectional study was conducted in department of tuberculosis and chest disease in Civil Hospital, Ahmedabad, a tertiary care hospital situated in western India. The study was conducted in year 2004 after taking approval from Institutional Ethical Approval. All patient having CVD and pulmonary symptoms coming to the outpatient department are included in the study. Initially diagnosis based on the clinical suspicion and later on confirmed by radiological and laboratory findings.

All confirmed patients were included in the study after taking informed written consent. Written consent of parent or guardian was taken in case of patient less than 18 year of age. All eligible patients were interviewed personally and socio-demographic information, clinical symptoms and past history were recorded in semi structured pre tested questioner. All data were computerized in Microsoft excel software and analyzed using the same.

RESULTS

Total 50 patients were included in the study. Table 1 shows list and frequency of various CVDs diagnosed in

these patients. Fotty percent patients were having SC followed by SLE (30%). None patient was having of Dermatomyositis or Sjogrens Syndrom or Ankylosing Spondylitis.

Table 1: Distribution of various Collagen Vascular Diseases

| Disease | Cases (n=50) (%) |
|----------------------------------|------------------|
| Scroderma | 20 (40.0) |
| Systemic Lupus Erythmatousus | 15 (30.0) |
| Rheumatoid Arthritis | 10 (20.0) |
| Mixed Connective Tissue Disorder | 5 (10.0) |
| Dermatomyositis / Polymositis | 0 |
| Sjogrens Syndrom | 0 |
| Ankylosing Spondylitis | 0 |

Age and sex wise distribution of patients were shown in table 2 and table 3 respectively. Most common age group was 31 to 40 year of age followed by 21 to 30 year of age. Both these group contribute more than half of the cases. Mean age of SC patients was 32.65 years (SD 6.81) while that of SLE patients was 28.33 years (SD 7.41). Mean age of RA and MCTD patients was 37.1 years (SD 7.99) and 43.2 years (SD 7.72) respectively.

Table 2: Age wise distribution of patients of Collagen Vascular Diseases

| Age group | SC (n=20) | SLE (n=15) | RA (n=10) | MCTD (n=5) | Total (n=50) |
|-----------|-----------|------------|-----------|------------|--------------|
| <20 | 1 (5.0) | 4 (26.7) | 1 (10.0) | 0 (0.0) | 6 (12.0) |
| 21-30 | 7 (35.0) | 7 (46.7) | 1 (10.0) | 0 (0.0) | 15 (30.0) |
| 31-40 | 8 (40.0) | 4 (26.7) | 2 (20.0) | 2 (40.0) | 16 (32.0) |
| 41-50 | 4 (20.0) | 0 (0.0) | 5 (50.0) | 2 (40.0) | 11 (22.0) |
| >50 | 0 (0.0) | 0 (0.0) | 1 (10.0) | 1 (20.0) | 2 (4.0) |

Figure in parenthesis indicate percentage

Table 3: Sex wise distribution of patients of Collagen Vascular Diseases

| Sex | SC (n=20) | SLE (n=15) | RA (n=10) | MCTD (n=5) | Total (n=50) |
|--------|-----------|------------|-----------|------------|--------------|
| Female | 16 (80.0) | 13 (86.7) | 7 (70.0) | 4 (80.0) | 40 (80.0) |
| Male | 4 (20.0) | 2 (13.3) | 3 (30.0) | 1 (20.0) | 10 (20.0) |

Figure in parenthesis indicate percentage

Eighty percent patients were female with female to male ratio was 4:1. In SC, SLE, RA and MCTD female to male ration was 4:1, 6.5:1, 2.33:1 and 4:1 respectively.

Table 4 shows clinical symptoms and signs patients were having while reported to the outpatient department. The most common cheast symptoms in the patients of CVD was breathlessness (50%) and fatigue (50%), followed by cough (46%) and chest pain (18%). The most common sign was Crackles (32%) followed by clubbing in (22%) of patients. In SC, breathlessness on exertion (75%) was the most common symptom followed by fatigue (60%) and dry cough (35%). In SLE, fatigue (46.66) was the most common complaint followed by chest pain (26.66%). In RA, cough with expectoration (60%) was the most common complaint followed by breathless on exertion (50%). In MCTD, fatigue (80%) and cough with expectoration (60%) were the two leading complaints.

Out of 50 patients of CVDs 13 patients consumed antitubercular treatment in past, out of them only two were sputum positive for AFB, 11 patients were smear negative for AFB. It is possible that CVD was missed as a diagnosis previously and patient were subjected to treatment for tuberculosis rather than considering it as pulmonary manifestation of CVD.

DISCUSSION

In present study mean age of SC, SLE, RA and MCTD patients was 32.65 years (SD 6.81), 28.33 years (SD 7.41), 37.1 years (SD 7.99) and 43.2 years (SD 7.72) respectively. This was comparable with the finding of Sharma SK et al⁵ where he found mean age of patients 37.6 years (SD 1.7), 34.6 years (SD 3.4), 43.0 years (SD 4.0) and 39.3 years (SD 3.8) respectively.

Table 4: Clinical Presentation among patients of Collagen Vascular Diseases

| Symptoms & Signs | SC (n=20) | SLE (n=15) | RA (n=10) | MCTD (n=5) | Total (n=50) |
|--------------------------|-----------|------------|-----------|------------|--------------|
| Breathless on Exertion | 15 (75.0) | 3 (20.0) | 5 (50.0) | 2 (40.0) | 25 (50.0) |
| Dry cough | 7 (35.0) | 3 (20.0) | 1 (10.0) | 0 (0.0) | 11 (22.0) |
| Cough with expectoration | 3 (15.0) | 0 (0.0) | 6 (60.0) | 3 (60.0) | 12 (24.0) |
| Fatigue | 12 (60.0) | 7 (46.7) | 2 (20.0) | 4 (80.0) | 25 (50.0) |
| Fever | 0 (0.0) | 2 (13.3) | 4 (40.0) | 2 (40.0) | 8 (16.0) |
| Chest pain | 2 (10.0) | 4 (26.7) | 2 (20.0) | 1 (20.0) | 9 (18.0) |
| Hemoptysis | 0 (0.0) | 1 (6.7) | 2 (20.0) | 1 (20.0) | 4 (8.0) |
| Clubbing | 5 (25.0) | 0 (0.0) | 4 (40.0) | 2 (40.0) | 11 (22.0) |
| Crackles | 10 (50.0) | 0 (0.0) | 3 (30.0) | 3 (60.0) | 16 (32.0) |
| Other Skin manifestation | 14 (70.0) | 10 (66.7) | 1 (10.0) | 4 (80.0) | 29 (58.0) |
| Joint menofestation | 1 (5.0) | 0 (0.0) | 7 (70.0) | 4 (80.0) | 12 (24.0) |

Figure in parenthesis indicate percentage

Table 4: Tuberculosis history among patients of Collagen Vascular Diseases

| History | SC (n=20) | SLE (n=15) | RA (n=10) | MCTD (n=5) | Total (n=50) |
|-------------------------|-----------|------------|-----------|------------|--------------|
| Past history of AKT | 5 (25.0) | 3 (20.0) | 4 (40.0) | 1 (20.0) | 13 (26.0) |
| Sputum Positive for AFB | 1 (5.0) | 0 (0.0) | 1 (10.0) | 0 (0.0) | 2 (4.0) |
| Sputum Negative for AFB | 4 (20.0) | 3 (20.0) | 3 (30.0) | 1 (20.0) | 11 (22.0) |

Figure in parenthesis indicate percentage

The most common age group in this study was 21-40 year which contributed more than sixty percent of the patient. Thiruvengadam KV et al⁶ found equal representation of 21 to 40 year and 41 to 60 year.

In this study female were four time higher than male. Sharma SK et al⁵ find higher proportion of female but the sex ratio of female to male was 1.45:1 compare to 4:1 in present study. In SLE, female to male ratio was 6.5:1 in present study which is similar to Sharma et al¹ study. In RA in present study female to male ratio was 2.33:1 which similar to study by other researches.⁵

In SLE, breathlessness on exertion was present in 20% of patients which comparable to Purice tudor A et al.⁷ Fatigue was the most common complaint (46.66%), as similar to Purice tudor A et al.⁷ In RA, cough with expectoration was present in 60% of cases in present study which is similar to the findings of Alber D Newcomer et al.⁹ The symptoms of breathlessness on exertion is also comparable, clubbing (40%) was in higher number of patients probable due to the late presentation. Crackles were heard in 30% of cases in present study which is also comparable to Alber D Newcomer et al.⁹ This higher frequency of pulmonary symptoms and sign may be due to late presentation of patient at tertiary care centre or and delay in suspicion of CVD among them. It may be possible that patient presented early with few pulmonary symptoms but was not suspected for having CVD.

CONCLUSION

From this study we conclude that most of the patient presented in young and middle age which higher proportion of female. The present study also highlights

that most of the patients when presented were having wide-ranging pulmonary symptoms-signs indicating extensive involvement of lung tissues which may lead to poor lung function and adding to morbidity and mortality. This finding emphasis need for early diagnosis and treatment at early stage of the disease which can be started as general health facilities by high suspicious of diagnosis for collagen vascular diseases.

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