

Neuropathic Pain In Rheumatoid Arthritis.

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ABSTRACT- Rheumatoid arthritis (RA) is a chronic systemic autoimmune inflammatory disease that affects mainly the small joints of the hands and feet. RA is one of the most common inflammatory joint diseases with the prevalence of 0.75% in India. Clinical neuropathy occurs in 0.5% to 85% of RA patients. Clinical neuropathy may present with a wide variety of symptoms, such as pain, paraesthesias, and muscle weakness. A sample size of 55(n=55) was taken, fulfilling the inclusion criteria. Consent was taken to participate in the study. The self-administered LANSS scale was used for assessment and scoring was done. Data was represented in terms of descriptive analysis. 34.55 % of the population recorded positive score for LANSS scale. Highest affection was burning pain or change in skin temperature which was found in 43% of study population, Followed by pain perception as pricking, tingling kind of pain in 32% subjects. Altered pin prick threshold in 32% subjects. Presence of abnormal skin appearance, abnormal skin sensitivity to touch and allodynia was noted to be 9.09%, 12.72%, 14.54 % respectively.

KEYWORDS -: Rheumatoid arthritis, LANSS scale, neuropathic pain, neuropathy

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I. INTRODUCTION

Rheumatoid arthritis is an autoimmune, chronic systemic inflammatory disease. ⁽¹⁾ RA's worldwide prevalence in adults is of 0.5 % to 1 % .⁽²⁾ In India the prevalence is estimated to be 0.75%. ⁽¹⁾ Women are more commonly affected than men. ⁽³⁾ The ratio of female is to male patient is (2:1 to 3:1). ^(5,6) The impact of RA on daily functioning, quality of life and on employment is immense. RA often leads to pain, fatigue, and disability resulting in significant reduction in health-related quality of life. ⁽⁴⁾ Additionally, RA imposes a substantial economic burden upon patients, due to both increased cost of medical care and loss or reduction of employment, frequently during peak working years. ⁽⁶⁾

Rheumatoid arthritis (RA) is mainly characterized by synovitis and joint destruction. The dominant feature is inflammation, primarily in the synovium. RA also has extra articular manifestations. The disease process in RA also affects the skin, the kidneys, the eyes, the cardiovascular system, the nervous system, the gastro intestinal tract and the blood. Extra articular manifestations occur in 10-20 % RA patients. Clinical neuropathy occurs in 0.5-85 % of the patients. Peripheral nervous system involvement is common in RA. Most commonly seen is the mono neuropathy, sensory-motor neuropathy and entrapment neuropathy. Neuropathy can be perceived as pain, paraesthesias and weakness by the patients. Patients usually get confused between the symptoms of neuropathy and arthritic pain. ⁽⁷⁾ Hence it is important to evaluate for such symptoms clinically on a regular basis.

Differentiation of neuropathic pain from arthritic pain is difficult. Leed's assessment of symptoms and signs of neuropathy (LANSS) is a scale that has 7 items. Self report questionnaire (S-LANSS) helps to identify the neuropathic mechanisms dominating the patient's pain. ⁽⁸⁾ S-LANSS is a validated in various languages for screening of various neuropathies successfully. Sensitivity and specificity of the scale is 98% and 97% respectively.

II. METHODOLOGY

Departmental review was taken. Fifty five subjects of rheumatoid arthritis visiting the rheumatoid clinic participated in the study. Subjects having medical conditions such as diabetes, hypothyroidism, gout, acromegaly or systemic lupus erythematosus along with previous history of musculoskeletal injuries of hand or neural lesions of hand were excluded from the study. Willingness for signing written consent was one of the inclusion criteria of the study. Each subject was given the self-assessment questionnaire and they were evaluated for allodynia and pin prick threshold. The results were calculated in terms of percentage of positive results. The data is presented as descriptive analysis.

III. RESULTS

All the subjects were in the age group of 35 years to 50 year with the average age being 42.12years with SD of (mean \pm 6.35).The chronicity of rheumatoid arthritis ranged from one year to fifteen years. Female is to male ratio in the study was 55:8. The study yielded positive results for the LANSS scale (score of more than 12) from 34.55 % of the population. 32% subjects stated positive results for unpleasant pain like tingling, pricking, needling.9.09% patients reported of changes in skin appearance, 12.72% subjects reported of skin being abnormally sensitive to touch, 43 % subjects reported of burning pain in the painful area. 14.54% reported of Allodynia and 30.90% subjects clinically showed reduced sensitivity for pin prick.

Table No. 1. Components of LANSS Scale affected in RA patient

LANSS scale result (Total score)	a-1 pricking,tingling,pins& needles kind of pain	a-2 abnormal skin apperance	a-3 abnormal sensitivity to touch	a-4 pain at rest	a-5 change in skin temperature	b-1 allodynia	b-2 altered pin prick
34.55%	32%	9.09%	12.72%	7.27%	43%	14.54	32

IV. DISCUSSION

Patients with connective tissue disease including RA may have different types of peripheral neuropathy, including entrapment neuropathy, distal axonal neuropathy, predominantly sensory neuropathy, mononeuropathy or multiple mononeuropathy, and fulminant sensorimotor polyneuropathy. Although the incidence of peripheral neuropathy in RA was reported between 0.5-30 percent, electrophysiological studies, biopsy and angiography indicated that the actual incidence was higher. ^(9, 10) Some studies reported that in patients with RA, mild sensory neuropathy could be seen at a rate of 75%. ^(11, 12)

Peripheral nerve involvement in RA includes several mechanisms. Peripheral neuropathy due to vasculitis is explained by immune complex-mediated damage of the vessel wall or myelinated nerves. Other possible causes of neuropathy are suggested as mechanical compression of nerves by swelling of the soft tissues, bone erosions and joint deformities or rheumatoid nodules. ⁽⁸⁾ However, it has been difficult to diagnose slight or early neuropathies as the study of the peripheral neuromuscular system is made complex by symptoms resulting from pain and stiffness of peripheral joints. ⁽¹¹⁾ Patients with evidential joint pain described additional symptoms like muscle weakness and paraesthesias suggestive of neuropathy. ^(13, 14) The study showed that the symptoms of pain turned out to be neuropathic in nature in around 34.55 % people. Burning sensation was the most common phenomenon experienced by the people. People also showed reduced threshold for pin prick and presence of allodynia. Very few experienced a change in skin colour.

Leffler et al found that RA patients with more than 5 years of symptoms showed generalized allodynia to pressure as well as increased sensitivity to light touch and hyperalgesia to innocuous cold. ⁽¹⁵⁾ These patients also had pressure allodynia at the thigh, and lower pressure pain thresholds (PPTs) than healthy controls at joint and non-joint sites. ⁽¹⁶⁾

Regular screening of patients using LANSS scale is important to detect early onset of neuropathy or nerve affection. If the patients show early signs of neuropathic pain with the LANSS score pointing positive, further investigations may be carried out followed by appropriate management .It also helps to raise awareness about the symptoms of neuropathic and arthritic pain as these symptoms usually overlap and hence neglected. It is a need of the hour, for crowded outpatient clinics, to have a simple and less time consuming diagnostic tool for the assessment of neuropathic pain. Hence S-LANSS can be effectively used for differential diagnosis of neuropathic pain. Re assessment of the subjects using the scale will allow early detection of neuropathies and create awareness in the patients.

V. CONCLUSION

LANSS scale can be used as an effective screening tool to differentiate between neuropathic and arthritic pain. It aids in an early diagnosis, prevention and treatment. It can also be used for prognosis. As mentioned above LANSS scale will also help in creating awareness regarding neuropathy and its symptoms. It is a very economical and convenient method for screening and early detection of nerve involvement. Prevention of long term complications can encourage active and better quality of life and psychosocial well being.

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ABBREVIATIONS:

RA: Rheumatoid arthritis

LANSS SCALE: The Leeds assessment of neuropathic symptoms and signs

SD: Standard Deviation

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