ISSN: 0975-8585

Research Journal of Pharmaceutical, Biological and Chemical Sciences

Study of Prevalence of Rheumatoid Arthritis in Bidar Population: A Hospital Based Study.

Sudheendra Kulkarni[1]*, K Bhaskar[2], Chandrakanth Chillargi[1], and Naveen Kumar G Havale[3].

[1]Department of Microbiology, Bidar Institute of Medical Sciences, Bidar, Karnataka, India.
[2]Department Orthopaedics, Bidar Institute of Medical Sciences, Bidar, Karnataka, India.
[3]Department of Community Medicine, Bidar Institute of Medical Sciences, Bidar, Karnataka, India.

ABSTRACT

To conduct a systematic study of prevalence of Rheumatoid arthritis (RA) in Bidar population. The study was conducted between the years 2010-2013 in Bidar Institute of Medical Sciences Teaching hospital, Bidar. Study included 500 patients aged over 15 years. The study area included the patients of Bidar district population coming to the OPD of Bidar Institute of Medical Sciences Teaching hospital, Bidar. The prevalence was determined based upon the clinical examination on OPD basis and Microbiological investigation. The prevalence of RA was found to be 13%. The prevalence peaked at the age 35-44 years (27.69%) before dropping in those aged ≥ 65 years. RA was more prevalent in women than in men. (Women= 66.15, Men= 33.85). Prevalence of RA is more (13%) in Bidar population than the global prevalence. By this study, it is observed that the women seropositive RA rate is more.

Keywords: Epidemiology, Prevalence, Rheumatoid arthritis, Seropositive.

Corresponding author

ISSN: 0975-8585

INTRODUCTION

RA is a chronic disabling and deforming inflammatory immunological disease that produces remarkable morbidity and disability with remarkable impact on patients' lives, on their families and on society[1]. The prevalence of this chronic disease provides an indication of the burden of a disease, which is useful to health professionals and policy makers for health care planning. Variations in the prevalence of rheumatoid arthritis (RA) have been observed both overtime and geographically. The hypothesis that the decreased occurrence of RA has been suggested in countries where epidemiological studies have been conducted in previous decades [2].

The world prevalence of RA might be around 0.3-1.2% [3] and the disease is present in all populations. The highest prevalence rates have been observed in American Indian tribes and in Alaskan Indians [4-6] and the lowest in African and Asian countries. [7, 8,13] Epidemiological studies in Europe have shown intermediate prevalence rates [13-20]. In Indian population prevalence was found to be 0.75% [21].

Our objective was to estimate the point prevalence of RA in Bidar population coming to the district hospital OPD of general medicine and orthopaedics with the history and complaint of multiple joint pain and morning stiffness.

MATERIALS AND METHODS

The study was conducted during the year 2010-2013 in the Department of Microbiology, Bidar institute of medical sciences and teaching hospital Bidar, Karnataka.

The study involved 500 patients of Bidar region coming to the outpatient department of Bidar Institute of Medical Sciences - teaching hospital with the complaint of joint pain, morning stiffness and multiple joint pains and responded positively to any of four questions of standard questionnaire. Study population comprised of patients aged over fifteen years. Previously diagnosed cases of RA who attended OPD were also included in the study. The patients with extra skeletal symptoms were excluded from the study. Patients who met inclusion criteria and consented to be part of study formed the study population. Institutional ethical committee clearance was obtained before the start of study.

Each patient who had consulted the orthopedicion or physician was provided with standard questionnaire aimed at obtaining a variety of information on socio demographic characteristics, medical history, and RA symptoms.

The specific questionnaire was analogous to that used by Mac Gregor et.al [22]and considered the following 4 questions. Have you ever had (i) Any joint pain, not due to trauma, lasting at least six continuous weeks? (ii) Any joint swelling lasting at least six continuous weeks? (iii) Morning stiffness in any joint, lasting at least 1 hour before maximal improvement? (iv) A present or previous diagnosis of arthritis.

The sensitivity of this questionnaire to detect cases of RA was shown to be 100%. All patients who responded positively to any of the 4 questions of this specific questionnaire were subsequently evaluated by the orthopedician during the first visit. Appropriate investigations like x-ray and detection Rheumatoid factor were performed. Blood was drawn for detection Rheumatoid factor. The diagnosis of RA was made on the latex agglutination quantitative and semi quantitative slide test for in vitro detection of IgM Rheumatoid factor (RF) in the serum of the patients. And both clinical and laboratory findings were assessed by the Orthopedician in order to reach a definite diagnosis. Previously diagnosed cases of RA were ascertained by detection of Rheumatoid factor.

RESULTS

A total of 500 patients were tested for RA by microbiological investigations and were diagnosed by the Orthopedician.

ISSN: 0975-8585

Prevalence of RA

Of the 500 patients, 65 were seropositive and were diagnosed as having had RA. (13% positive and 87% negative). Figure 1.

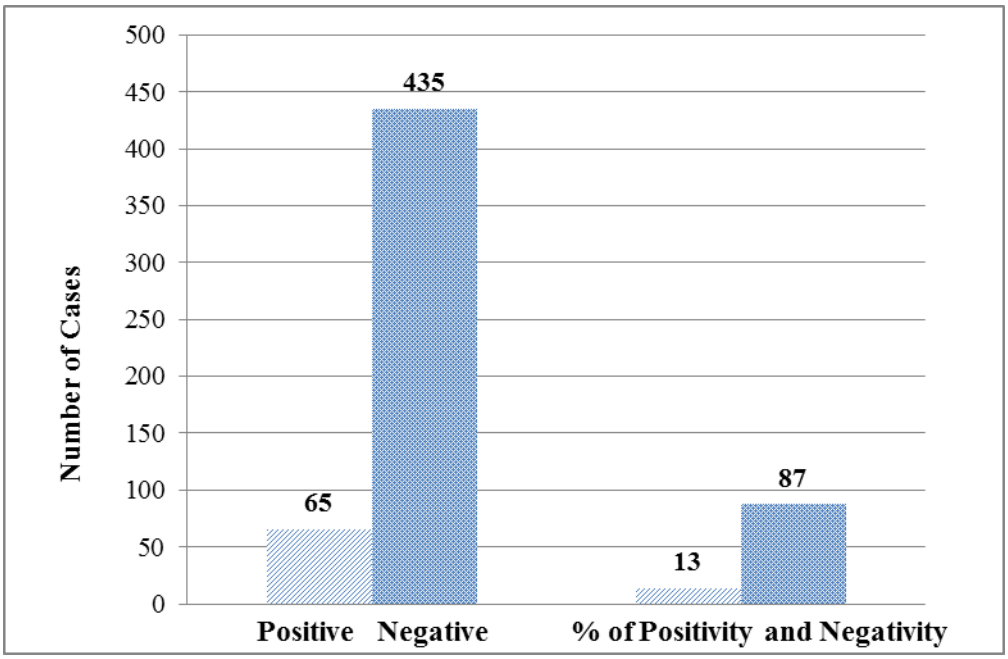

Figure 1: Showing number and percentage of positivity of RA among all patients

The prevalence of RA was significantly higher among females (66.15%) compared with males. (33.85%). Figure 2.

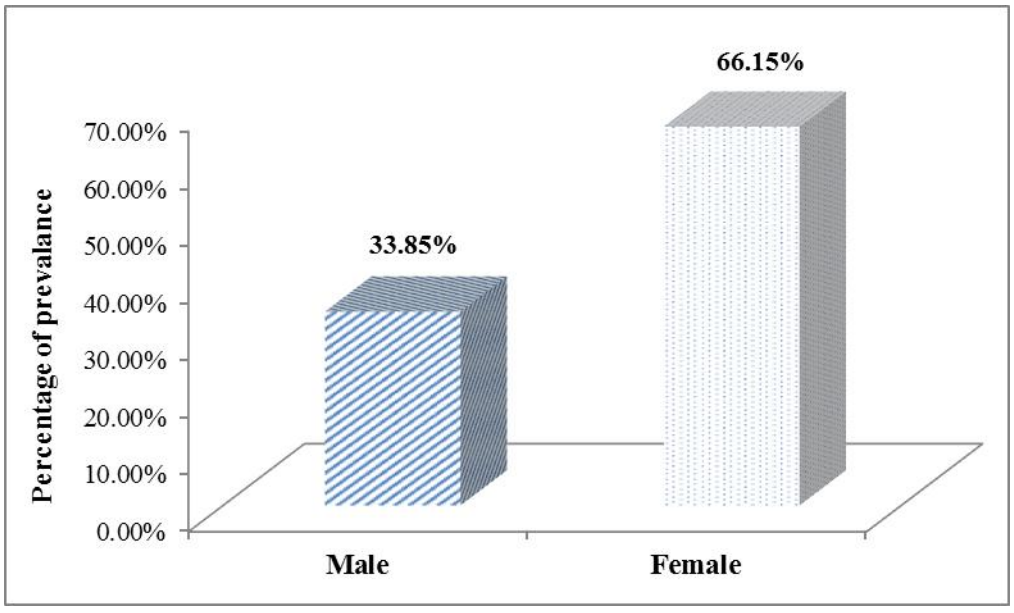

Figure 2: Showing sex wise distribution of RA positivity

The prevalence of RA increased with age and peaked among age group of 35-44 showing 27.69% positivity and then decreased in the last 3 age group intervals. Figure 3.

ISSN: 0975-8585

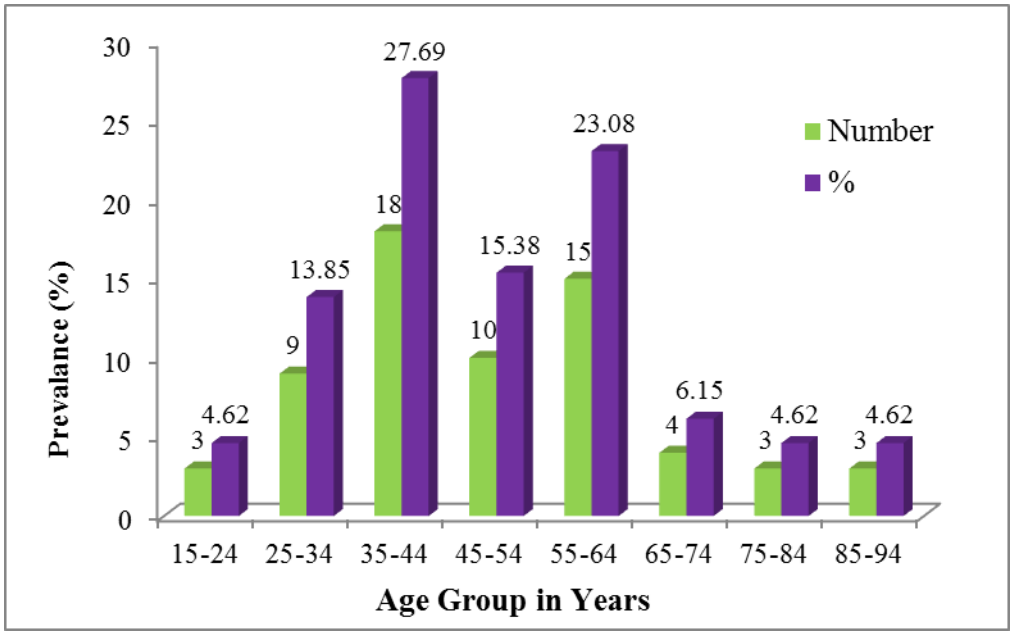

Figure 3: Prevalence of RA by age group

This study showed that female sex and the patients between age group of 35-44 were significantly associated with seropositive RA.

DISCUSSION

The study helps to highlight the burden of RA, which provides important information for policy makers, professionals and patient groups [23].

This study included all patients with active disease and those in remission. Previously diagnosed cases were also examined and included in study. Therefore it can be considered a cumulative prevalence [24] which is more useful for assessing geographical differences. A prevalence of currently active disease may be more useful for planning health care provision, as it considers only those patients in current need of care.

Compared to studies in India, and across globe, prevalence of RA was found to be higher in our study essentially because, our study being hospital based, included patients who responded positively to questionnaire and had musculoskeletal symptoms.

Establishing the prevalence rate of a disease like RA, is not only a matter of scientific curiosity, but also has important implication for society as a whole.

This study throws light on the seropositive RA prevalence in the Bidar population.

CONCLUSION

In conclusion, our results confirm that the RA was more frequent in women than in men as expected. These findings should encourage further studies to identify the genetic factors associated with both disease occurrence and severity.

Limitation of the Study

This study does not provide detailed information about the severity distribution of the disease, which is needed to identify those patients with severe disease who need more aggressive treatment. Although the study provided an estimate of the prevalence of the disease, factors that affect RA, like contraceptive use, diet, climate or ethnicity were not considered.

ISSN: 0975-8585

ACKNOWLEDGEMENT

We thank Dr. Vittal B. G., Associate Professor, Department of Biochemistry, Bidar Institute of Medical Sciences, Bidar for his suggestions and analysis of the manuscript.

REFERENCES

[1] Carmona L, Villaverde V, Hernandez-Garcia C, Ballina J, Gabriel R, Laffon A, et al. Rheumatol (Oxford) 2002;41:88–95.
[2] Guillemin F, Briancon S, Klein JM, Sauleau E, Pourel J. J Rheumatol 1994;23:264–8.
[3] Silman AJ, Horchberg MC, eds. Epidemiology of the Rheumatoid diseases: Oxford : Oxford medical publications, 1993:7-68
[4] Boyer GS, Templin DW, Lanier AP. J Rheumatol 1991;18:1477–84.
[5] Beasley RP, Willkens RF, Bennett PH. Arthritis Rheum1973;16:743–8.
[6] Harvey J, Lotze M, Stevens MB, Lambert G, Jacobson D. Arthritis Rheum 1981;2:717–21.
[7] Silman AJ, Ollier W, Holligan S et al. J Rheumatol 1993;20:618–22.
[8] Wood WJ, Kato H, Johnson KG, Yutaka U, Russell WJ, Duff IF. Arthritis Rheum 1967;10:21–31
[9] Darmawan J, Muirden KD, Valkenburg HA, Wigley RD. Br J Rheumatol 1993;32:537–40
[10] Lau E, Symmons D, Bankhead C, McGregor A, Donnan S, Silman A. J Rheumatol 1993;20:1133–7.
[11] Chou Chung-Tei, Lu Pei, Dhe-Ming Chang, Ching-Fa Lee, Schumacher HR, Liang M. J Rheumatol 1994;21:302–6.
[12] Moolenburg JD, Valkenburg HA, Fourie PB. Ann Rheum Dis 1986;45:691–5.
[13] Brighton SW, de la Harpe AL, van Staden DJ, Badenhort JH, Meyers OL. J Rheumatol 1988;15:405–8.
[14] de Graaff R, Laine V, Lawrence JS. Comparison of surveys in various northern European countries. In: Kellgren JH, Jeffrey MR, Ball J. The epidemiology of chronic rheumatism. Vol. 1. Oxford: Blackwell,1963:228–38.
[15] Aho K, Kaipiainen O, Helio¨vaara M, Klaukka T. Semin Arthritis Rheum 1998;27:325–34.
[16] Miall WE. Ann Rheum Dis 1955;14:150–8.
[17] Steven MM. Ann Rheum Dis 1992;51:186–94.
[18] van Schaardenburg D, Lagaay AM, Breedveld FC, Hijmans W, Vandenbroucke P. Br J Rheumatol 1993;2:104–9.
[19] Power D, Codd M, Ivers L, Sant S, Barry M. Ir J Med Sci 1999;168:197–200.
[20] Saraux A, Guedes C, Allain J et al. J Rheumatol 1999; 26:2622–7.
[21] Malaviya AN, Kapoor SK, Singh RR, Kumar A, Pande I. Rheumatol Int 1993;13(4):131-4.
[22] MacGregor AJ, Riste LK, Hazes JM, Silman AJ. Ann Rheum Dis 1994;53:293–7.
[23] WHO. World Health Organ Tech Rep Ser 2003;919:i–x, 1–218.