ISSN: 0975-833X

Available online at http://www.journalcra.com

International Journal of Current Research
Vol. 8, Issue, 02, pp.26437-26439, February, 2016

INTERNATIONAL JOURNAL OF CURRENT RESEARCH

RESEARCH ARTICLE

DISTRIBUTION OF ANTI-CYCLIC CITRULLINATED PEPTIDE (ANTI -CCP) ABS IN THERHEUMATOID ARTHRITIS (RA) PATIENT IN WASIT PROVINCE

***Muntadher A. AlSaidi**

Department of Microbiology, College of Medicine, Wasit University, Kut, Iraq

ARTICLE INFO

Article History:
Received 24th November, 2015
Received in revised form
06th December, 2015
Accepted 23rd January, 2016
Published online 27th February, 2016

Key words:

Rheumatoid arthritis,
Anti-cyclic citrullinated peptide antibodies,
Distribution.

ABSTRACT

Background: Citrullinated proteins have been discovered in the joints of patients with rheumatoid arthritis but not in other forms of joint disease. The diagnostic, predictive and prognostic role of anti-cyclic citrullinated peptide (CCP) antibodies in rheumatoid arthritis (RA) patients is widely accepted. Moreover, detection of these antibodies in subjects presenting with undifferentiated arthritis (UA) is associated with a significant risk to develop the disease. Anti-cyclic citrullinated peptide (anti-CCP) antibody testing is particularly useful in the diagnosis of rheumatoid arthritis, with high specificity, presence early in the disease process, and ability to identify patients who are likely to have severe disease and irreversible damage.

Material and Methods: A total of 38 patients with RA were included in this study. Anti-CCP antibody was determined with enzyme-linked immunosorbent assay (ELISA).

Results: Anti-CCP positivity was significantly higher in female group 12 (14.45%) than in male 2 (2.41%). The results indicated that anti-CCP positivity for RA patients was 14 (16.86%) when compared with the negative group 69 (83.14%).

Conclusion: The detection of anti-CCP antibodies is a useful diagnostic tool, particularly in the early stages of the disease, and a predictive factor in terms of disease progression and radiological damage

Citation: **Muntadher A. AlSaidi, 2016.** "Distribution of anti-cyclic citrullinated peptide (Anti -CCP) Abs in Therheumatoid arthritis (RA) Patient in Wasit province", *International Journal of Current Research,* 8, (02), 26437-26439.

INTRODUCTION

Rheumatoid Arthritis (RA) is the commonest inflammatory joint disease, affecting nearly 1% of the adult population worldwide. It is characterized by multiple deformities and is associated with considerable morbidity and mortality (Waljee and Chung, 2011). Rheumatoid arthritis (RA) is an autoimmune disease that affects mainly the synovial membranes and articular structures and is characterized by chronic, systemic inflammation involving multiple joints (Bizzaro *et al.,* 2011). About 1% of the US population has RA, with prevalence being 2 to 3 times higher in women than men. Although thecause of RA remains unknown, the increased risk in family members of patients with RA suggests a genetic component (Sauerland *et al.,* 2005). Besides the rheumatoid factor (RF), another group of auto antibodies has recently been detected in serum of patients with RA patients: the anti-cyclic citrullinated peptide antibodies (anti CCP) (Lee and Schur, 2003).

****Corresponding author: Muntadher A. AlSaidi***
Department of Microbiology, College of Medicine, Wasit University, Kut, Iraq.

Citrulline is formed by de-imination of arginine residues in several proteins by the action of enzyme peptidyl arginine deiminase (PAD) (Vallbracht *et al.,* 2005). Citrullinated extracellular fibrin in the RA synovium may be one of the major auto antigens driving the local immune response, suggested by the discovery of local production of anti- CCP and anti-citrullinatedfilaggrin antibodies in the Joint (Schellekens *et al.,* 1998). There is no single clinical, radiologic, or serologic test that enables adiagnosis of RA to be made with certainty. As with other autoimmune rheumatic diseases, the diagnosis depends upon the aggregation of characteristic symptoms, signs, laboratory data, and radiologic findings (Harrison *et al.,* 1998). This study aims to Early identification of patients with RA and, in particular, those likely to assume a more rapidly destructive form of disease, is important because of the possible benefit from early, aggressive intervention with disease modifying agents.

MATERIALS AND METHODS

Patients: Serum samples were collected from Eighty-three patients were kept at (-20˚C) with clinically diagnosed

Rheumatoid arthritis (RA) from both sexes and different ages were included in this study. They were attended to the Special Clinic in Al- Kut city from April 2014 to the end of July 2015. These patients referred to They were later referred to the Medical Diagnostic Laboratory to confirm the Rheumatoid arthritis from undifferentiated arthritis.

ELISA Test: The presence of anti-cyclic citrullinated peptide (CCP) antibodies in rheumatoid arthritis (RA) patients were measured according to manufacturer's instruction by ELISA kit (Euroimmun, Germany) The anti-cyclic citrullinated peptide (CCP) antibodies in rheumatoid arthritis (RA) patients were performed as described by the producers.

Statistical Analysis

All statistical analyses were conducted using the Statistical Package for Social Sciences (SPSS) version 19.1.

RESULTS AND DISCUSSION

The study includes (61 females, 22 males, mean age: 53.8±13.1), distribution of RA patients. The disease showed a female predilection 12 (14.45%) among the study of RA patients. The assay findings showed positive results for anti-CCP 14 (16.86%).

Table 1. prevalence of anti-cyclic citrullinated peptide (CCP) antibodies in rheumatoid arthritis (RA) patients in the study groups

Anti ccp	No. Positive	No. Negative	Total
83	14(16.86%)	69(83.14%)	83(100%)

Table 2. The results of anti-cyclic citrullinated peptide (CCP) antibodies in rheumatoid arthritis (RA) patients were analyzed according to these groups

Anti ccp	No. Positive	No. Negative	Total %
Male	2 (2.41%)	20 (24.1%)	22 (26.5%)
Female	12 (14.45%)	49 (59.04%)	61 (73.49%)
total	14 (16.86%)	69 (83.14%)	83 (100%)

Anti-CCP positivity was significantly higher in female group 12 (14.45%) than in male 2 (2.41%). The results indicated that anti-CCP positivity for RA patients was 14 (16.86%) when compared with the negative group 69 (83.14%). Recently, cyclic citrullinated peptide antibodies (anti-CCP) have come into use for the diagnosis of RA. It has been reported that anti-CCP has quite a high specificity for RA (98%), together with a sensitivity similar to that for rheumatoid factor (RF) (Zendman *et al.,* 2006). About 1% of the world population has RA, with prevalence being 2 to 3 times higher in women than men. Although the cause of RA remains unknown, the increased risk in family members of patients with RA suggests a genetic component, Environmental or hormonal factors may be involved in perpetuating the inflammatory process and joint destruction (Pinheiro *et al.,* 2003). However, the exact sex-related mechanism remain elusive (Forslind *et al.,* 2004). In recent years, the generation of serological tests for accurate ACPA detection lead to an impressive improvement in the diagnosis of inflammatory articular disorders. Citrullinated peptides have been found in synovial tissues from RA patients as well as non-RA controls, although the formation of antibodies against citrullinated proteins seems to be very specific for RA (Burr *et al.,* 2012). In particular, anti-CCP2 assays are helpful in various clinical settings, such as early diagnosis of RA (Van Venrooij *et al.,* 2011; Palazzi *et al.* 2012). The initial anti-CCP levels appear to be of great importance in predicting the interval time to disease onset, since a delay in RA diagnosis could occur in subjects with low antibody levels at symptom onset (Gerli *et al.,* 2008). It has been suggested that anti-CCP has an important role in grading clinical activity (Choi *et al.,* 2005; Pinheiro *et al.,* 2003). It was proved that anti-CCP titer correlated with disease activity in RA (Kastbom *et al.,* 2004; Forslind *et al.,* 2004). As a result, such patients should receive anti-rheumatic therapy that suppresses disease activity early in the course of their disease (Kastbom *et al.,* 2004). anti-CCP antibodies may be present prior to the appearance of symptoms of RA. ELISA assays that detect anti-CCP antibodies have a sensitivity and specificity of 47 to 76% and 90 to 96 % for RA, respectively (Kakumanu *et al.,* 2008; Fabien *et al.,* 2008). Anti-CCP proved to be a powerful diagnostic tool, especially in ambiguous cases or negative patients with RA (Forslind *et al.,* 2004).

REFERENCES

Bizzaro, N., Mazzanti, G., Tonutti, E., et al. 2001. Diagnostic accuracy of the anti-citrulline antibody assay for rheumatoid arthritis. Clin Chem., 47:1089-1093. *Erratum in: Clin Chem.*, 47:1748.

Burr, M., Viatte, S., Bukhari, M., Plant, D., Symmons, D. P., Thomson, W., Barton, A. 2012. Long-term stability of anti-cyclic citrullinated peptide antibody status in patients with early inflammatory polyarthritis. *Arthritis Res Ther.,* 14: R109.

Choi, S. W., Lim, M. K., Shin, D. H., Park, J. J., Shim, S. C. 2005. Diagnostic performances of anti-cyclic citrullinated peptides antibody and antifilagrin antibody in Korean patients with rheumatoid arthritis. *J Korean Med Sci*., 20: 473-8.

Fabien, N., Olsson, N. O., Goetz, J., et al. 2008. Prevalence of autoantibodies to cyclic citrullinated peptide in patients with rheumatic diseases other than rheumatoid arthritis: a French multicenter study. *Clin Rev Allergy Immunol*, 34:40.

Forslind, K., Ahlmen, M., Eberhardt, K., Hafstr, M. I., Svensson, B. 2004. BARFOT Study Group. Prediction of radiological outcome in early rheumatoid arthritis in clinical practice: role of antibodies to citrullinated peptides (anti-CCP). *Ann Rheum Dis*., 63: 1090-5.

Forslind, K., Ahlmen, M., Eberhardt, K., Hafstrom, I., Svensson, B. 2004. Prediction of radiological outcome in early rheumatoid arthritis in clinical practice: role of antibodies to citrullinated peptides (anti- CCP). *Ann Rheum Dis*., 63: 1090–5.

Gerli, R., BartoloniBocci, E., Sherer, Y., Vaudo, G., Moscatelli, S., Shoenfeld, Y. 2008. Association of anti-cyclic citrullinated peptide antibodies with subclinical atherosclerosis in patients with rheumatoid arthritis. *Ann Rheum Dis.*, 67:724-725.

Harrison, B. J., Symmons, D. P., Barrett, E. M., Silman, A. J. 1998. The performance of the 1987 ARA classification criteria for rheumatoid arthritis in a population based cohort of patients with early inflammatory polyarthritis. American Rheumatism Association. *J Rheumatol*., 25:2324-2330.

Kakumanu, P., Yamagata, H., Sobel, E. S., et al. 2008. Patients with pulmonary tuberculosis are frequently positive for anti-cyclic citrullinated peptide antibodies, but their sera also react with unmodified arginine-containing peptide. Arthritis Rheum, 58:1576.

Kastbom, A., Stranberg, G., Lindroos, A., Skogh, T. 2004. Anti-CCP antibody test predicts the disease course during 3 years in early rheumatoid arthritis (the Swedish TIRA Project). *Ann Rheum Dis*., 63: 10859.

Lee, D. M., Schur, P. H. 2003. Clinical utility of the anti-CCP assay in patients with rheumatic diseases. *Ann Rheum Dis*., 62:870-874.

Palazzi, C., Buskila, D., D'Angelo, S., D'Amico, E., Olivieri, I. 2012. Autoantibodies in patients with chronic hepatitis C virus infection: pitfalls for the diagnosis of rheumatic diseases. *Autoimmun Rev*., 11:659-663.

Pinheiro, G. C., Scheinberg, M. A., Aparecida da Silvia, M., Maciel, S. 2003. Anti-cyclic citrullinated peptide antibodies in advanced rheumatoid arthritis. *Ann Intern Med.*, 139: 234-5.

Sauerland, U., Becker, H., Seidel, M., et al. 2005. Clinical utility of the anti-CCP assay: experiences with 700 patients. *Ann Y A cad Sci*. 1050:314-318.

Schellekens, G. A., de Jong, B. A. W., van den hoogen, F. H. J., van de Putte, L. B. A. 1998. Citrulline is an essential constituent of antigenic determinants recognized by rheumatoid arthritis specific autoantibodies. *J Clin Invest*., 101:273–81.

Vallbracht, I., Rieber, J., Oppermann, M., et al. 2004. Diagnostic and clinical value of anti-cyclic citrullinated peptide antibodies compared with rheumatoid factor isotypes in rheumatoid arthritis. *Ann Rheum Dis.,* 63:1079-1084.

Van Venrooij, W., van Beers, J., Pruijn, G. 2011. Anti-CCP antibodies: the past, the present and the future. *Nat Rev Rheumatol*, 7:391-398.

Waljee, J. F., Chung, K. C. 2011. Outcomes research in rheumatoid arthritis. *Hand Clinics*., 27(1):115-26.

Zendman, A. J. W., Van Venrooij, W. J., Pruijn, G. J. 2006. Use and significance of anti-CCP autoantibodies in rheumatoid arthritis. Rheumatology, 45: 20-5.

****