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DIET HABITS OF RHEUMATOID ARTHRITIS PATIENTS IN TURKISH SOCIETY AND RELATIONSHIP BETWEEN DIET HABITS AND RHEUMATOID ARTHRITIS ACTIVITY

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ABSTRACT

Background: Among the environmental factors involved in the pathogenesis of dietary habits and trends of these patients, follow-up and treatment of disease is important in terms. Our aim in this study of patients with rheumatoid arthritis (RA) disease activity of eating habits and these habits (DAS 28) is to investigate the effect.

Methods: In this context Bezmialem Foundation University physical medicine and rehabilitation department depends on the rheumatology outpatient clinic refer to the ACR-2010 RA criteria based on the diagnosed 56 diagnose the patient nutritional status related forms creating a face to face interview method were filled. This form of patient demographics, disease activity, smoking and alcohol use, concomitant diseases, disease duration, and nutritional status questionnaire was completed on.

Results: In cases of water consumption, salt, fast food, eggs, milk, yogurt, cheese, wheat, cereal, whole wheat bread, white bread, butter, margarine consumption was recorded. Patients with food consumption was no correlation between the DAS ($p>0.050$).

Conclusion: Further studies with comparison groups and larger samples are needed to explore the promising results of this study before any cause and effect relationship can be determined.

Keywords: Rheumatoid arthritis, diet, rheumatoid arthritis diet.

INTRODUCTION

Rheumatoid arthritis is a chronic joint disease that involves synovial inflammation of the erosion of cartilage. This leads to the destruction of the joint over time. RA does not have a known etiology¹, however research has demonstrated both genetic and environmental factors for the susceptibility and the development of the disease².

It has been suggested that a Mediterranean diet, rich in fish, olive oil, cooked vegetables and fruit has a protective effect against RA which could be due to the high content of omega 3 in such a diet^{3,4}. Consumption of red meat would have no effect on the risk of developing RA⁵.

Rheumatoid arthritis; of unknown etiology, which involves joints and watch with disfigurement, chronic, inflammatory, multisystem disease. Discussed in the group of autoimmune diseases and environmental, genetic, hormonal factors presumed to occur by the interaction of a disease. Among the environmental factors involved in the pathogenesis of dietary habits and trends of these patients, follow-up and treatment of disease is important in terms. The possible benefits of specific diets for patients with rheumatoid arthritis have been tested in several trials, but the conclusions drawn from these are conflicting. Furthermore, many of the studies that revealed positive results of dietary therapy were not published in peer-reviewed journals⁶.

Our aim in this study of patients with with RA of short duration in relation to the degree of systemic inflammatory activation and the well-recognized disease activity score based on the assessment of 28 joints (DAS28) of eating habits and these habits is to investigate the effect.

METHODS

This randomized, prospective, controlled, single blind study was conducted in Physical medicine and Rehabilitation department of Bezm-i Alem Vakıf University, faculty of Medicine. In this context Bezmialem Foundation University physical medicine and rehabilitation department depends on the rheumatology outpatient clinic refer to the ACR-2010⁷ rheumatoid arthritis criteria based on the diagnosed 54 diagnose the patient nutritional status related forms creating a face to face interview method were filled. This form of patient demographics, disease activity, smoking and alcohol use, concomitant diseases, disease duration, and nutritional status questionnaire was

completed on. Of the cases, tobacco and alcohol use, have breakfast frequency, daily water consumption, salt consumption, fast food, eggs, milk, yogurt, cheese, wheat, cereal, whole wheat bread, white bread, butter, margarine consumption frequency questionnaire was completed which provides. Each food choices for every meal, every day, 3 days a week, 2 days per week, 1 day per week, 15 days, 1 month, do not know the answer consisted of the form. In addition to their demographic characteristics (age, gender, weight, height, body mass index [BMI]), the patients were also questioned for occupation, main symptoms, time of diagnosis. The patients were between the ages of 20 and 65 included in this study. The patients have had disease duration of ≥ 6 weeks, have been treated with any biological or non-biological disease-modifying anti-rheumatic drugs (DMARDs). For all RA patients, DAS28 including high-sensitivity C-reactive protein (hsCRP), the tender joint count (28 joints), the swollen joint count (28 joints), and the patient's assessment of global well-being (100mm visual analogue scale-VAS) was calculated⁸. Of patient body weight and fat mass, body fat percentage was calculated.

All the recruited subjects signed informed consent forms before participating in the study and the approval of the local Ethics Committee was obtained. All the subjects gave their consent to the random assignment to the groups.

The erythrocyte sedimentation rate (ESR) was measured through the Westergren method (mm/h) and the serum C-reactive protein (CRP) level was determined with the help of nephelometry (mg/dl).

The calculations were performed using the Statistical Package for Social Sciences for Windows software version 16.0 (SPSS Inc., Chicago, IL, USA). The Kolmogorov-Smirnov test was used to confirm that data within the ranges of normal distribution in both groups. A non-parametric test was employed for the variables outside the normal distribution. The comparison of the data between the groups was carried out through the independent-samples t test. Statistical significance was based on a value of $p < 0.05$ with a 95% confidence interval.

RESULTS

56 RA patients were included in the study (Figure 1). The majority of the RA patients were female (84%). The mean age was 47.57 ± 13.40 years. The mean disease duration

was 8.16 ± 3.59 years. Patient's BMI was 29.74 ± 9.66 . Patients were appraised in terms of smoking and alcohol use in 21 of 56 patients (37.5%) smokers, 5 (8.9%) total patients who had consumed alcohol. 42 (75%) patients did not make breakfast in the morning. The mean cup of tea consumption 4.91 ± 3.79 , 2.12 ± 2.92 was the average water consumption. The average food consumption in Table 1 is also indicated (Table 1). Body fat percentage of the patients was 35.82 ± 9.40 %, , fat kg was 27.92 ± 14.38 , mean DAS 28 score was 3.33 ± 1.14 . The average ESR of the patients was 34 ± 12 mm / h, mean CRP was 1.12 ± 0.9 . In cases of water consumption, salt, fast food, eggs, milk, yogurt, cheese, wheat, cereal, whole wheat bread, white bread, butter, margarine consumption was recorded. Patients with food consumption was no correlation between the DAS 28 ($p>0.050$).

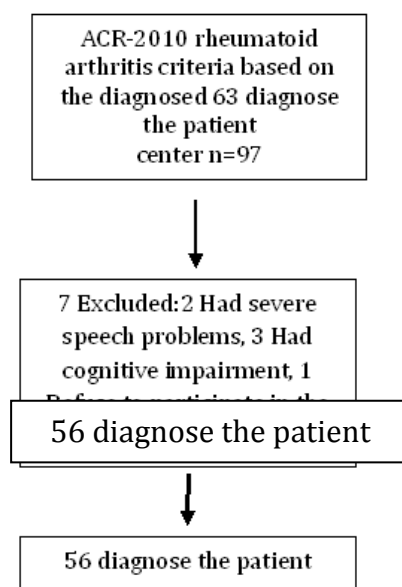


Figure 1. Study flowchart

Food	Avarage Frequency	Consumption
Milk	Once a week	
Yoghurt	Every day	
Cheese	Every day	
Wheat bread	15 a day	
White bread	Every day	
Butter	2 days per week	
Margarine	One day per month	
Careal	One day a month	

Table 1. The food avarage consumption frequency

DISCUSSION

The main aim of this study was to investigate the relationship between diet and disease activity, as assessed by DAS 28, in RA. As the most important result of our study, in cases of water consumption, salt, fast food, eggs, milk, yogurt, cheese, wheat, cereal, whole wheat bread, white bread, butter, margarine consumption was recorded. Patients with food consumption was no correlation between the DAS($p>0.050$).

Diet and RA DAS 28 with keywords when searching on the PubMed are five one hit quit working. These are limited and insufficient reserved.

The serum leptin and albumin levels were significantly lower, whereas the inflammatory markers were increased, in the high disease activity group in Hyashi et al. study. The dietary intake assessment showed a lower intake of fish oil and a lower ratio of monounsaturated fatty acid intake in the high disease activity group. There was a negative correlation between the DAS28 and the dietary intake of the ratio of monounsaturated fatty acid to total fatty acid intake. The serum oxidative stress marker (reactive oxygen metabolites) showed a positive correlation to the DAS28. The salivary reactive oxygen metabolites also correlated with C-reactive protein and serum reactive oxygen metabolites⁹.

Altered serum adipokine levels with decreased albumin may reflect the deterioration that is associated with rheumatoid arthritis. An increased oxidative stress was observed in sera and saliva. Intakes of ω -3 polyunsaturated fatty acids, fish oil, and monounsaturated fatty acid seem to affect disease activity and may have beneficial effects by decreasing inflammation⁹.

Benito-Garcia E and et al. yaptıkları çalışmada Two hundred and sixty-four patients with RA taking MTX had an average caffeine intake of 211.7 mg and average MTX of 16.0 mg/wk. The low caffeine group comprised 87 patients, the moderate 86, and the high 91. In 3 multivariate models, there was no statistical difference in MTX efficacy between groups, as measured by DAS28 score, MDHAQ (Multidimensional Health Assessment Questionnaire) score, and duration of morning stiffness at study enrollment. Moderate and high caffeine group had higher DAS28 scores, physician's global assessment, and swollen joint counts, but differences were not significant¹⁰.

Sköldstam L et al. for their study mediterranean diet DAS 28, Health Assessment Questionnaire (HAQ), a health survey of quality of life (Short Form-36 (SF-36)) relationship have investigated. The results indicate that patients with RA, by adjusting to a Mediterranean diet, did obtain a reduction in inflammatory activity, an increase in physical function, and improved vitality¹¹.

The beneficial roles of ω -3 PUFA in fish oil include decreasing the inflammatory response, controlling immune function, and decreasing symptoms in RA¹². Moreover, previous studies have reported that fish oil supplementation decreases the medicine intake in RA¹³. Supplementation with olive oil may improve clinical and laboratory parameters of disease activity in patients with RA¹⁴. Previous studies have reported a lower risk of developing RA with increasing intakes of olive oil¹⁵.

The oxidative stress marker (ROMs) in sera and saliva positively correlated with the DAS28 and/or CRP levels. Patients with RA and high disease activity are more likely to develop cardiovascular diseases. Previous studies that have evaluated the association among dietary intake, symptoms, inflammation, and disease activity in RA have suggested a dependence on the types of dietary fat and fatty acids⁹.

Other studies have linked RA severity and development to the consumption of red meat and animal fat in the United States¹⁶ although that link has been disputed by a study of nurses in the United Kingdom⁵. In Greece, high amounts of olive oil consumption were found to be correlated with a lowered severity of RA¹⁷. In Finland and the UK, researchers found that patients with high levels of antioxidants had lower subjective complaints than those patients with low levels of antioxidants¹⁸.

Since there are hardly any previous studies on this subject, a cross-sectional study design without a control group was chosen as an effective starting point and for planning further studies. In this respect, a major strength of this study is the relatively large and comprehensive cohort of patients with a verified diagnosis of RA. The study used a validated, robust, and the dietary habits of all responding RA patients attending the rheumatology clinic in the city of Istanbul. Further studies with comparison groups and larger samples are needed to explore the promising results of this study before any cause and effect relationship can be determined.

REFERENCES

1. Fox DA. Rheumatoid arthritis--heresies and speculations. *Perspectives in Biology and Medicine*. 1997;40:479-91.
2. Tobon GJ, Youinou P, Saraux A. The environment, geo-epidemiology, and autoimmune disease: rheumatoid arthritis. *Autoimmunity Review*. 2010;9:288-92.
3. Rosell M, Wesley AM, Rydin K, Klareskog L, Alfredsson L. Dietary fish and fish oil and the risk of rheumatoid arthritis. *Epidemiology*. 2009;20:896-901.
4. Pattison DJ, Harrison RA, Symmons DP. The role of diet in susceptibility to rheumatoid arthritis: a systematic review. *J Rheumatol*. 2004;31:1310-9.
5. Benito-Garcia E, Feskanich D, Hu FB, Mandl LA, Karlson EW. Protein, iron, and meat consumption and risk for rheumatoid arthritis: a prospective cohort study. *Arthritis Res Ther*. 2007;9:16.
6. Kjeldsen-Kragh J. Dietary treatment of rheumatoid arthritis. PhD thesis. University of Oslo. 1995.
7. Daniel Aletaha, Tuhina Neogi, Alan J. Silman, et al. Rheumatoid arthritis classification criteria: an American College of Rheumatology/European League Against Rheumatism collaborative initiative. *Ann Rheum Dis*. 2010;62:2569-81.
8. Prevoo MLL, van 'T Hof MA, Kuper HH, van Leeuwen MA, van de Putte LBA, van Riel PLCM. Modified disease activity scores that include twenty-eight-joint counts: development and validation in a prospective longitudinal study of patients with rheumatoid arthritis. *Arthritis and Rheumatism*. 1995;38:44-48.
9. Hayashi H, Satoi K, Sato-Mito N, Kaburagi T, Yoshino H, Higaki M, Nishimoto K, Sato K. Nutritional status in relation to adipokines and oxidative stress is associated with disease activity in patients with rheumatoid arthritis. *Nutrition*. 2012, 28,1109-14.
10. Benito-Garcia E, Heller JE, Chibnik LB, Maher NE, Matthews HM, Bilics JA, Weinblatt ME, Shadick NA. Dietary caffeine intake does not affect methotrexate efficacy in patients with rheumatoid arthritis. *J Rheumatol*. 2006;33:1275-81.
11. Sköldstam L, Hagfors L, Johansson G: An experimental study of a Mediterranean diet intervention for patients with rheumatoid arthritis. *Ann Rheum Dis*. 2003; 62: 208-14.

12. Dawczynski C, Schubert R, Hein Y, Müller A, Eidner T, Vogelsang H, et al. Long-term moderate intervention with n-3 long-chain PUFA-supplemented dairy products: effects on pathophysiological biomarkers in patients with rheumatoid arthritis. *Br J Nutr.* 2009;101: 1517–1526.
13. Galarraga B, Ho M, Youssef HM, Hill A, McMahon H, Hall C, et al. Cod liver oil (n-3 fatty acids) as an non-steroidal anti-inflammatory drug sparing agent in rheumatoid arthritis *Rheumatology (Oxford).* 2008;47: 665–669.
14. Berbert AA, Kondo CR, Almendra CL, Matsuo T, Dichi I. Supplementation of fish oil and olive oil in patients with rheumatoid arthritis *Nutrition.* 2005; 21: 131–136.
15. Linos A, Kaklamani VG, Kaklamani E, Koumantaki Y, Giziaki E, Papazoglou S, et al. Dietary factors in relation to rheumatoid arthritis: a role for olive oil and cooked vegetables? *Am J Clin Nutr.* 2005;70: 1077–1082.
16. Pattison DJ, Symmons DPM, Lunt M, Welsh A, Luben R, Bingham SA, Khaw KT, Day NE, Silman AJ. Dietary risk factors for the development of inflammatory polyarthritis. *Arthritis & Rheumatism.* 2004;12:3804-12.
17. Linos A, Kaklamani VG, E Kaklamani, Y Koumantaki, E Giziaki, S Papazoglou, CS Mantzoros. Dietary factors in relation to rheumatoid arthritis: a role for olive oil and cooked vegetables? *American Journal of Clinical Nutrition.* 1999;70:1077-82.
18. Darlington LG, Stone TW. Antioxidants and fatty acids in the amelioration of rheumatoid arthritis and related disorders. *British Journal of Nutrition.* 2001;85:251-69.