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Early diagnosis and treatment of rheumatoid arthritis

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Abstract

Rheumatoid arthritis (RA) is an auto-immune inflammatory progressive disorder which in the absence of appropriate treatment can lead to joint destruction and disability in the long run. Prognosis of RA may be predicted based on the presence of clinical and laboratory evidences. New criteria for classification of RA provide opportunity for earlier treatment. Hence this article reviews the importance of early diagnosis and treatment of rheumatoid arthritis.

Keywords: ACCP, early treatment, new criteria, outcome, regression, rheumatoid arthritis

Introduction

Aim

To evaluate the methods for early diagnosis and the treatment strategies to reduce the progression of rheumatoid arthritis.

In this systemic mini review, we evaluated the methods for early diagnosis and the treatment strategies to reduce the progression of rheumatoid arthritis. The research for literature was carried out using online databases like Pub Med, Research Gate, MEDLINE and Google Scholar. The studies written in English and published in peer reviewed journals were considered. The original research paper data were included.

The keywords used were, ACCP, early treatment, new criteria, outcome, regression, rheumatoid arthritis, rheumatoid factor. The titles and abstracts for each study were thoroughly read. The references from each article were further searched upon to look for various other studies.

The studies were cross-sectional in nature. The studies had prospective design and included diagnosis and treatment as the key points. Few studies also analyzed other screening methods for RA. Also, one study evaluated the role of arthroplasty in a major joint(knee). No cadaver studies were included and no scoring system was done to evaluate any of these studies.

Results and discussion

In the literature search many studies about rheumatoid arthritis were found but only few had data evaluating the methods for early diagnosis and the treatment strategies to reduce the progression of the disease. 6 studies were reviewed for this study.

In a study was done by I Vallbracht ^[1] among 715 patients; with RA (n=295), degenerative or other inflammatory disease (n=163) in Germany, the RF isotypes for IgG, IgA and IgM were measured by ELISA test. The study reported that the highest sensitivity was found for IgM – RF (66.4%) and CCP (64.4%) & highest specificity was achieved by CCP (97.1%) and IgG – RF (91.0%). The study concludes that the screening methods for RA includes IgM – RF and CCP assays which are superior to other RF isotypes.

In another cross-sectional study done by Desheng Yang *et al.* ^[2], among 148 patients in Qingdao haici hospital, China, reported that the combined detection of ACCP and RF with imaging has a high diagnostic efficiency in the diagnosis of RA. ACCP and RF are commonly used indicators for the diagnosis, but any one test has its own limitations. The combined testing can make up for the deficiencies of the single index testing and reduce the risk of misdiagnosis or missed diagnosis.

In a study conducted in Mangolia, China by Wu Y *et al.*, ^[3] a patient with rheumatoid arthritis

and a healthy volunteer were scanned with ^{99m}Tc -3PRGD2. A significantly higher ^{99m}Tc -3PRGD2 uptake was observed in the joint affected by rheumatoid arthritis when compared to the disease-free joints. Therefore, they found that ^{99m}Tc -3PRGD2 is a promising agent for the early diagnosis of rheumatoid arthritis.

The study was conducted in Germany [4]. The results of the study suggests that an early treatment of patients with abatacept has advantages compared to adalimumab for both the patients and the payers and treatment with abatacept appears to have lower costs per response (remission) compared to treatment with adalimumab as a first bDMARD. The days spent in remission can be increased thus drops the overall costs for medical resources.

In a cross-sectional observational study done by Miura M *et al.*, [5] aimed to investigate the current situation of the treatment of patients with RA at Chiba University Orthopaedic department in 195 patients with RA. The rates of using methotrexate and biologic agent were approximately 76% and 30%, respectively, 30% of patients had previously undergone orthopedic surgeries, and 16% underwent multiple surgeries. Total knee arthroplasty was the most frequent surgery (22%), and bilateral procedure was performed in almost half of these patients with TKA. Limitation of this study was the lack of data on patient visual analog scale and the number of swollen/tender joints; thus, the disease activity could not be sufficiently evaluated. Another limitation is that this was the first observational study to investigate the situation of the treatment of patients with RA at the institution and no previous data were available to compare the findings of this study, so the changes of the trend of drug information or orthopaedic surgeries were not proven.

In the ORAL Sequel long-term extension (LTE) study done by Wollenhaupt J *et al.*, [6] conducted in 414 centers across 43 countries for evaluating the safety and efficacy of tofacitinib 5 mg and 10 mg twice daily (BID) for up to 9.5 years in patients with rheumatoid arthritis(RA), Tofacitinib 5 mg and 10mg BID demonstrated a consistent safety profile (as monotherapy or combination therapy) and sustained efficacy in this open-label LTE study of patients with RA. Clinically meaningful improvements in the signs and symptoms of RA and physical functioning were also observed.

Conclusion

The early diagnosis of RA remains the need of the hour. Studies have reported the methods for early diagnosis and the treatment strategies to reduce the progression of rheumatoid arthritis. IgM – RF and CCP assays are noted to emerge as the screening assays superior to other RF isotypes. ^{99m}Tc -3PRGD2 is a promising agent for the early diagnosis of rheumatoid arthritis. Coming to treatment, sustained improvement in signs and symptoms of RA and improvements in physical function must be the outcome. Apart from the use of conventional DMARDs, the safety profile of tofacitinib was better than many other drugs. The authors recommend the studies involving tofacitinib among people of different ethnic groups.

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