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# OUTCOME OF EDUCATION WITH REGARD TO INFLUENZA AND PNEUMOCOCCAL VACCINATIONS IN INFLAMMATORY ARTHRITIS PATIENTS ON DMARDS

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**Background:** Inflammatory arthritis (IA) patients on immunosuppressant disease modifying drugs (DMARDs) are at an increased risk of infections. Influenza and pneumococcal vaccines are recommended as part of the BSR and EULAR guidelines for the clinical management of these patients. Prior to commencing DMARDs, the patients are reviewed by the nurse specialist, who discusses the benefits versus risks of DMARDs, necessary monitoring and recommends the pneumococcal and influenza vaccines.

**Objectives:** The aim of this audit is to assess the uptake of the pneumococcal and the influenza vaccine in IA patients prior to starting biologic or synthetic DMARDs as advised by the nurse specialist during the education visit with the patient.

**Methods:** The study sample included 139 patients with various types of IA, including rheumatoid arthritis, psoriatic arthritis and ankylosing spondylitis, who attended the rheumatology nurse education sessions prior to starting DMARDs in a secondary care hospital in 2017. Verbal advice supported by a vaccination leaflet developed in 2016 was given by the rheumatology nurse. Data was compiled by means of a telephone questionnaire.

**Results:** One hundred and twenty six (90.6%) participants recalled being given advice on vaccinations. Seventy eight (62%) of these patients received the influenza vaccine. The rest (28%) did not receive the vaccine for various reasons including fear of side effects, fear of developing a worse infection, belief of inefficacy and fear of injections.

A significant improvement ( $p=0.0084$ ) in the influenza vaccination rates was noted since a previous audit in 2016, where following verbal education by a rheumatologist, only 41.4% received the influenza vaccine.

A significant improvement in uptake was also noted in the pneumococcal vaccination rates since only 17.2% of the patients received the pneumococcal vaccine in 2016 compared to 62.7% in 2017 ( $p<0.0001$ ). Various reasons including fear of side effects, belief of inefficacy, fear of injections and financial implications were given by patients who did not receive the pneumococcal vaccine.

Overall, 62% of the patients received both vaccines after education given by the rheumatology specialist nurse and receiving the vaccination leaflet.

**Conclusion:** This audit showed a significant progress in the uptake of the influenza and pneumococcal vaccinations in patients with inflammatory arthritis following verbal advice by the specialist rheumatology nurse and the introduction of a vaccinations' educational leaflet.

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# COST-SAVING FOR HEALTH SERVICES DETECTING THE MISDIAGNOSIS OF RHEUMATOID ARTHRITIS USING IMAGING IN THE PROCESS OF DIAGNOSIS: EVIDENCE FROM REAL-WORLD

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**Background:** The diagnosis of rheumatoid arthritis (RA) using EULAR criteria through conventional assessments remains controversial, especially for those with seronegative results, many of patients without other diagnostic aids as imaging, could be wrong diagnosed followed by expensive treatments (1-3).

**Objectives:** To evidence through real-world data how the use of imaging within a screening process of diagnosis of RA can saving future costs for unnecessary treatments in patients with misdiagnosis of RA.

**Methods:** A retrospective real-world data (RWD) analysis was developed from medical records of patients with presumptive RA diagnosis reportedly seronegative for both rheumatoid factor (RF) and anti-cyclic citrullinated peptide antibodies (ACPA), and who met ACR/EULAR 2010 classification criteria, in the period between July 2016 and June of 2017; patients were assessed by imagenology (X-ray, ultrasound (US) or magnetic resonance imaging (MRI) according to the screening diagnosis protocol in a center of integral attention for rheumatoid arthritis (CIA-RA) in order to confirm diagnosis of RA, or classify patients in an alternative proper diagnosis. Direct costs of diagnosis was estimated in two scenarios: the conventional diagnosis and the screening process of diagnosis in the CIA-

RA. To quantify the cost-savings for this process we also estimated the cost of treatment for the first year after diagnosis for patients with RA and patients with the most common diagnosis found after screening.

**Results:** 440 patients were referred to our center with presumptive diagnosis of RA in the period, who were assessed for ACPA and RF obtaining a seronegative result for both. After screening process just 115 patients were classified as RA, 99 as SRA and 16 as Nonspecific RA; 12.2% were identified by X-Ray, 67.7% were identified by US and 20% by MRI. The most frequently misdiagnosis found was Osteoarthritis in the 72.5% of patients assessed by the screening process. In that way, the conventional diagnosis cost \$54.4, while the CIA-RA screening diagnosis cost was \$247.1 per patient, however there was found a potential cost-saving from using the CIA-RA screening process of diagnosis of \$1,440,494 per year due to the pharmacological cost saving of 325 patients who requires treatment for OA and not for RA.

**Conclusion:** According with our findings the use of imaging within a diagnostic screening process combining conventional criteria is a useful tool to discard false positive diagnosis of RA. Despite the fact that at first sight, the cost of screening process of diagnosis is more expensive than conventional diagnosis, after one year of treatment it can be assumed potential cost-savings using the proposed approach.

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# IMPROVING CLINICAL OUTCOME AND REDUCING COST FOR PATIENTS WITH RHEUMATIC DISEASES VIA ONLINE INTERACTION WITH RHEUMATOLOGISTS BASED ON SMART SYSTEM OF DISEASE MANAGEMENT (SSDM) MOBILE TOOL

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**Background:** Without efficient primary medical care and follow-up system in China, patients can choose any hospitals or doctors they like in seeking care. As a result, most patients rush to large hospitals. Once patients left those clinics, no follow up data is available. Surveys show that over 40% of the rheumatic patients don't need to go to a hospital, only need advice from rheumatologists. SSDM is a series of applications for chronic diseases management, which strengthens the interaction between doctors and patients based on valuable clinical data. Our previous study showed that patients can master the SSDM and perform self-management after training, including evaluations on disease activity and health assessment questionnaire (HAQ), as well as medication and lab test data entries.