Switching from intravenous tocilizumab to subcutaneous administration during COVID19 pandemic – impact on treatment efficacy and patient satisfaction

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Background- Tocilizumab (TCZ) is a humanized monoclonal antibody directed against the IL-6 receptor that is approved for the treatment of patients with rheumatoid arthritis (RA), systemic juvenile idiopathic arthritis (JIA), by intravenous (IV) administration or subcutaneous (SC) administration. SC TCZ has demonstrated efficacy with a similar safety profile as IV TCZ in two head to head studies [1,2]. At the beginning of Covid19 pandemic, according to The Israeli Ministry of Health' directive, all patients treated by IV TCZ were switched to SC TCZ.

Aim- Assessment of SC TCZ efficacy and patient satisfaction in patients previously treated with IV TCZ and switched to SC.

Methods- Single center retrospective study. Clinical and laboratory data of IV TCZ treated patients who switched to SC TCZ were retracted and analyzed. The parameters included: physical examination (tender and swollen joints), morning stiffness, pain VAS, blood tests (complete blood count, liver and kidney functional blood count, CRP and erythrocyte sedimentation rate) and the need for steroids and nonsteroidal anti-inflammatory drugs. Data were collected from the last two visits before switching to SC treatment and two visits afterwards. A telephone call conversation was conducted for all patients who continued SC treatment and did not arrive to follow-up visits.

Results-Forty patients (age 55.8±14.5 years) treated with IV TCZ, at the Rheumatology Day Care were switched to SC TCZ in April-May 2020. One patient was excluded from the study because of intercurrent illness. Most of the patients were treated with TCZ for 6.5±2.4 years and have low disease activity. 25/39 (64%) patients discontinued SC TCZ therapy, 23 patients switched back to IV TCZ, 1 patient to barcitinib and 1 patient to DMARDs. The majority of discontinuations were due to flare up of the underlying disease reflected by increased number of tender and/or swollen joints, prolongation of morning stiffness or increased pain VAS score. Skin reactions were observed in 2 patients, and elevated liver function tests in 1 patient.

Two patients were hospitalized for IV glucocorticoids and 1 patient underwent knee arthrocentesis. 14/39 (36%) patients continued SC TCZ treatment. 4/14 (29%) expressed less satisfaction with SC TCZ therapy.

Conclusions- More than half of the patients switched from IV TCZ to SC TCZ showed signs of flare of their underlying disease or were less satisfied with SC treatment. Switching of longterm IV TCZ treatment to SC TCZ might be problematic in some of the patients.

1. Efficacy and safety of subcutaneous tocilizumab versus intravenous tocilizumab in combination with traditional DMARDs in patients with RA at week 97 (SUMMACTA). Gerd R Burmester, Andrea Rubbert-Roth, Alain Cantagrel, et al. 2015
1. Longterm Safety and Efficacy of Subcutaneous Tocilizumab Monotherapy: Results from the 2-year Open-label Extension of the MUSASHI Study. Atsushi Ogata, Koichi Amano, Hiroaki Dobash, et al. 2015