

## Orthopaedics-2021 “Rheumatoid arthritis activity and severity in relation to commonly used contraceptive methods in a cohort”

A Review Article- Hala Lotfy Fayed\*

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**Statement of the Problem:** Rheumatoid arthritis (RA) is a chronic inflammatory autoimmune disease; characterized by an immune response against post translationally modified proteins in particular citrullinated proteins. Recent studies have found that ACPA response matures shortly before clinical disease manifests itself. Data suggested the association of an increased risk of ACPA positivity with IUD use prompting the need to investigate this association suggesting a possible etiopathogenic role of IUD use in Egyptian female RA patients. We hypothesized that the IUD might be a potent environmental trigger through its potential to induce chronic subtle renewed tissue injury and chronic inflammation triggering citrullination at the site of the endometrium thus aggravating and perpetuating RA disease in female RA patients.

**Objective:** To study the impact/effect of commonly used contraceptive methods on rheumatoid arthritis (RA) disease activity, severity, and damage in a cohort of Egyptian female RA patients.

**Methods:** Two hundred female RA patients were enrolled and divided into two groups; non-contraception users (50 patients) and contraception users (150 patients). The latter group was further subdivided according to the method of contraceptive method used into: 89 intrauterine device (IUD)-users; 45 combined oral contraceptives (COC)-users; 16 injectable users. All patients underwent thorough history taking with special emphasis on contraception history, clinical

examination, and assessment by routine laboratory tests, rheumatoid factor (RF) and antibodies to citrullinated protein antigens (ACPA). Rheumatoid arthritis disease activity was assessed using Disease Activity Score 28 using CRP (DAS28/CRP), while RA disease severity was assessed using Rheumatoid Arthritis Severity Scale (RASS). Bilateral hand x-rays were done and interpreted by the Short Erosion Scale (SES)

**Results:** The percentage of ACPA seropositivity among IUD-users was 75.3%; the highest among all studied subgroups. IUD users showed significantly higher ACPA titers ( $p=0.020$ ), as well as longer disease duration ( $p=0.021$ ) compared to other methods-users. The RASS was significantly higher in injectable users in comparison to other methods-users followed by the IUD-users ( $p=0.008$ ). COC-users had the least RASS. However, there were no significant differences regarding DAS28/CRP or SES between different contraceptive methods-users. There was positive correlation between ACPA titers and RASS.

**Conclusion:** The increased ACPA positivity as well as higher ACPA titers in women who are currently IUD-users suggests a possible etiopathogenic role for IUD in onset and perpetuation of RA disease. Mechanisms by which IUD could increase RA related autoimmunity risk were discussed. Whether cessation of IUD use in RA patients might improve their current state of disease need further study.

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