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OP0081

**PREVALENCE, CHARACTERISTICS, AND PREDICTORS OF BREAKTHROUGH COVID-19 INFECTIONS IN PATIENTS WITH RHEUMATOID ARTHRITIS: DATA FROM THE COVID-19 VACCINATION IN AUTOIMMUNE DISEASE (COVAD) STUDY**

**Keywords:** Rheumatoid arthritis, COVID, Vaccination/Immunization

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**Background:** Global data on COVID-19 breakthrough infections (BI) following COVID-19 vaccination among autoimmune rheumatic diseases (AIRDs) and especially rheumatoid arthritis (RA) is scarce.

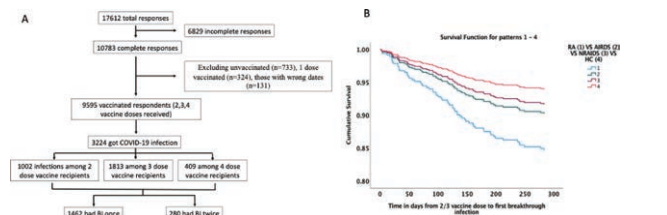
**Objectives:** This study aimed to examine the characteristics of COVID-19 BI among patients with RA and compare them with AIRDs and healthy controls (HCs).

**Methods:** A global e-survey, January-May 2022, collected data on COVID-19 vaccination, and BI in patients with RA, AIRDs, non-rheumatic autoimmune disease (nrAIDs), and HCs. BI was defined as infection after both primary or booster vaccine doses. Severe BI was defined as the need for hospitalization, including intensive unit care, oxygen therapy, or advanced treatment in the form of monoclonal antibodies.

**Results:** Of the 9595 vaccinated respondents of the e-survey, 3224 (33.6%) reported COVID-19. One BI was reported in 323/1802 (17.9%) patients with RA, 584/3869 (15.0%) patients with other AIRDs, and 467/3435 (13.5%) HCs. Similarly, second BI was reported by 280 (8.6%); 42 (2.3%) among RA, 90 (2.3%) among other AIRDs, and 124 (3.6%) among HCs.

The prevalence of first BI in patients with RA was higher than that in those with AIRDs (OR=1.2; 95%CI=1.1-1.4; p=0.001) and HCs (OR=1.4; 95%CI=1.2-1.6; p<0.001), but similar to nrAIDs (p=0.783). The prevalence of second BI was lower in patients with RA than in HCs (OR=0.6; 95%CI=0.4-0.9; p=0.012) and nrAIDs (OR=0.4; 95%CI=0.2-0.7; p=0.004), but similar to AIRDs (p=0.991). When compared with HCs, patients with RA reported significantly higher joint pain, hospitalizations, and need for advanced treatment at first BI. Patients with RA from very high HDI countries had lower hazard of first BI than those from high HDI countries (HR=0.026; 95%CI=0.001-0.6; p=0.027). Rituximab use predicted more frequent hospitalization (OR=3.4; 95%CI=1.3-11.4; p=0.045) and severe BI (OR=3.0; 95%CI=1.2-7.3; p=0.014).

**Conclusion:** Nearly one in five patients with RA reported BI. BI prevalence was higher in patients with RA and of higher severity than in HCs. Country HDI was an important determinant of outcomes, suggesting potential impact of environmental dynamics, local vaccination policy, and syndemic constructs that merit further exploration. Rituximab use predicted more frequent hospitalizations and more severe BI.



**Figure 1.** A. Flow chart of respondents, B. Survival analysis between RA, AIRDs, nrAIDs, and HC

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OP0082

**COVID-19 VACCINE SAFETY DURING PREGNANCY AND BREASTFEEDING IN WOMEN WITH AUTOIMMUNE DISEASES: RESULTS FROM THE COVAD STUDY**

**Keywords:** Pregnancy and reproduction, COVID, Vaccination/Immunization

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