Background: Evidence from published epidemiological studies found inconsistent evidence on the association of bariatric surgery with fracture risk.

Objectives: To evaluate the impact of bariatric surgery on fracture risk.

Methods: Electronic databases PubMed, and Embase were searched for studies assessing the association between bariatric surgery and fracture risk by two independent investigators. The study search period was from inception to September 2021. Study selection, data extraction, and risk of bias were assessed by independent investigators. Newcastle-Ottawa Scale (NOS) was used to assess the quality of included studies. The study search period was from inception to September 2021. Study selection, data extraction, and risk of bias were assessed by independent investigators. The current study found that bariatric surgery was associated with increased fracture risk. Clinicians should also evaluate the bone health profiling as a standard of care.

REFERENCES:

Disclosure of Interests:
Aishwarya Anilkumar: None declared, Sadaf Saeed: None declared, Ehsan Elsayed: None declared, Chandrin N R, Jayatilleke: None declared, Stuart Webber: None declared, Mathew A. Roy Consultant of: Worked as a paid consultant for Kyowa Kirin.


Outcome of COVID-19 in Rheumatic Diseases
Background: The risk of acquiring COVID-19, and the severity of illness if acquired, in the context of immune-mediated inflammatory diseases (IMIDs) and their therapy, remains incompletely understood. Reported infection rates and outcomes have varied depending on the IMIDs being studied, the nature and size of the study populations, and the presence or absence of appropriate control populations. Having more reliable analysis on larger populations is essential for current and future pandemics.

Objectives: Health records from one of the largest health systems in the US are analyzed to determine whether specific IMIDs, including common rheumatologic conditions and specific immunomodulatory drugs, are associated with certain COVID-19 outcomes, using multivariate models that include common chronic comorbidities.

Methods: Patients (pts) with and without IMIDs who were tested for SARS-CoV-2 antigen (n=1,101,431) were identified from the EHR from Providence St. Joseph Health, which serves much of the western US. Immunomodulatory drug therapy was defined as use within three months prior to the first test. Multivariate logistic regression (LR) was applied with machine learning metrics (feature importance, p-value) reported on an 80% training set and AUROC reported on 20% test set.

Results: Rates for positive COVID-19 tests, invasive mechanical ventilation (IMV) and mortality were not greater in the IMID than non-IMID population, whilst hospitalization was similar (Table 1). Importance and statistical significance of selected factors are shown in (Figure 1). The most important risk factors for hospitalization were age and heart failure. Heart failure was the most important risk factor for IMV, and age for increased mortality. Diabetes showed weak association with decreased hospitalization, IMV, and death. The use of conventional synthetic disease-modifying antirheumatic drugs (csDMARDs) and corticosteroids (CS) showed a weak association with hospitalization, and rituximab (RTX) showed a weak association with increased mortality. Limitations include lack of vaccination status and IMID disease severity/flare status. Testing was not universal.

Table 1. COVID-19 test results, hospitalization, invasive mechanical ventilation, and mortality

<table>
<thead>
<tr>
<th></th>
<th>Tested for COVID</th>
<th>n (%)</th>
<th>Hospitalized</th>
<th>n (%)</th>
<th>n, % of tested n, % of COVID+</th>
</tr>
</thead>
<tbody>
<tr>
<td>All pts</td>
<td>1,101,431</td>
<td>100%</td>
<td>1,049,007</td>
<td>95.3%</td>
<td>123,943 (11.7%) 19,729 (15.1%)</td>
</tr>
<tr>
<td>Pts without selected IMIDs</td>
<td>1,049,007</td>
<td>1,001 (0.8%) 2,323 (1.7%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pts with selected rheumatologic IMIDs</td>
<td>28,411</td>
<td>18,729 (0.8%) 2,165 (1.7%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pts with other selected IMIDs</td>
<td>24,013</td>
<td>1,010 (0.8%) 2,045 (1.7%)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Selected rheumatologic IMIDs = RA, SpA, PsA, SLE, Ps, SS; Other selected IMIDs = IBD, MS.

Conclusion: This analysis of COVID+ patients (n=1,101,431) from a large US health care system analyzes outcomes of patients with and without IMIDs; the majority were rheumatologic IMIDs. Patients with IMIDs had a similar rate of hospitalization, IMV, and death as those without IMIDs. The strongest associations with COVID-19 severity included heart failure and age. Spondyloarthritis was weakly associated with favorable outcomes whilst other conditions, including rheumatoid, were not worse than those of non-IMID patients. csDMARDs and corticosteroids were weakly associated with hospitalization and RTX with increased mortality. Other therapies were not associated with severe adverse outcomes.

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SEVERE COVID-19 OUTCOMES AMONG PATIENTS WITH AUTOIMMUNE RHEUMATIC DISEASES: A POPULATION-BASED STUDY

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Background: Individuals with autoimmune rheumatic diseases (ARDs) may be at greater risk of severe COVID-19 outcomes than individuals in the general population.

Objectives: This study assesses the risk of COVID-19-related hospitalization, intensive care unit (ICU) admission, and COVID-19-specific mortality in patients with ARDs compared to matched general population comparators.

Methods: We conducted a population-based cohort study, using administrative datasets from British Columbia, Canada (February 2020-August 2021). Among all test-positive SARS-CoV-2 adults, we used ICD codes to identify all individuals with an ARD: rheumatoid arthritis (RA), psoriasis/psoriatic arthritis (PsO/PsA), ankylosing spondylitis (AS), and systemic autoimmune rheumatic diseases (SARDs), including systemic lupus erythematosus (SLE), Sjogren’s syndrome, systemic sclerosis, myositis, and adult systemic vasculitides. Individuals with an ARD were matched 1:5 to general population test-positive SARS-CoV-2 individuals on age (± 5 years), sex, month/year of index COVID-19 test, and health authority. Cox proportional hazards regression models adjusting for sociodemographic status, Charlson comorbidity index, hypertension, rural address, and number of previous COVID-19 PCR tests were performed to assess risk of COVID-19-related hospitalizations, ICU admissions, and COVID-19-specific mortality (mortality with primary ICD code for COVID-19).

Results: The risk of COVID-19-related hospitalization was significantly increased for patients with ARDs overall (aOR: 1.30) (Table 1). Within ARDS, the patient group at greatest risk of hospitalization was adult vasculitides and systemic sclerosis (aOR: 2.18). The risk of ICU admission was significantly increased for patients with ARDs overall (aOR: 1.30). Within ARDS, the patient group at greatest risk of ICU admission was those with AS (aOR: 2.03). The risk of COVID-19-specific mortality was significantly increased for patients with ARDs overall (aOR: 1.24). Within ARDS, the patient group at greatest risk of COVID-19-specific mortality was those with AS (aOR: 2.15).

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