# COVID-19 susceptibility in endometriosis patients: A case control study

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## Abstract

**Problem:**Starting from November 2019, the world has had to face a devastating pandemic caused by SARS-CoV-2. Various studies have identified potential risk factors facilitating the infection, however it has not been demonstrated whether endometriosis might represent one of them. The purpose of this study was to evaluate if patients with endometriosis had a higher risk of contracting COVID-19 infection and, in such case, whether they developed a more severe infection than the general population. Furthermore, this study evaluated the possible correlation with the stage of endometriosis, based on the r-ASRM score, and the potential worsening of the disease during the SARS-CoV-2 infection.

**Method of study:**A case-control study was conducted from March 2020 to April 2021 at Macedonio Melloni Hospital, in Milan. A total of 401 women were recruited. The cases were 201 women with clinical or surgical diagnosis of endometriosis. The control group consisted of 200 women, without the disease. All women completed a self-administered questionnaire which evaluated their demographic and clinical characteristics, as well as a potential diagnosis of Covid-19.

**Results:**Comparison between the two groups showed that women with endometriosis had a higher frequency of COVID-19 than the control subjects (23% vs. 13.5%, P = .014), with a greater prevalence of fever (14.4% vs. 6%, P = .008) and myalgias or arthralgias (11.4% vs. 4.5%, P = .01). In multivariable logistic regression analyses, women with endometriosis had a higher risk of contracting SARS-CoV-2 infection (OR = 2.11, 95% IC: 1.20-3.80), regardless the stage of the disease.

**Conclusion:**Endometriosis increases the susceptibility to COVID-19, and women who suffer from it should be considered as fragile patients, worthy of prior access to SARS-CoV-2 vaccination campaign.

**Keywords:**COVID-19 susceptibility; SARS-CoV-2; coronavirus; endometriosis; hyperinflammatory diseases; immunologic factors; risk factors.