



Diabetes, eating disorders, autoimmunity and the COVID-19 pandemic

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Received: 4 May 2022 / Accepted: 26 May 2022 / Published online: 24 June 2022
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To the Editor

We read with great interest the research by Michal Gillon-Keren et coll. “Exacerbation of disordered eating behaviors in adolescents with type 1 diabetes during the COVID-19 pandemic” recently published on the Journal [1].

The Authors, in their observational longitudinal study, evaluated in adolescent aged 15–19 years with type 1 diabetes (T1D) the changes of dietary habits during the COVID-19 pandemic and highlighted an increase in disordered eating behavior. They suggest that such increase may be due to eating pathology, the role of inflammation and the immune system in this context should not be underestimated. The incidence of eating disorders among adolescents increased with COVID-19 pandemic, as well as the risk of developing diabetes. It would seem to exist a two-way relationship between COVID-19 and diabetes mellitus. On the one hand, people with diabetes are at higher risk of developing complications when they have COVID-19, and on the other, SARS-CoV-2 could act as a diabetogenic agent by binding to ACE2 in the beta cells of the pancreas causing acute dysfunction and impaired glucose regulation [2]. “Diabulimia” is the term, sometimes used, to indicate the combination of an eating disorder with T1D: the patient deliberately chooses insulin restriction to control body weight [3]. SARS-CoV-2 could induce or amplify from an immunometabolic perspective immunosenescence, inflammaging and autoimmunity [4]. Current observations suggest that SARS-CoV-2

could trigger autoimmunity, in patients hospitalized for severe COVID-19 a variety of de novo autoantibodies are detected but still little is known about their actual immunopathological role. An immune attack by molecular mimicry may be the result of the immune response to antigens produced by SARS-CoV-2 similar to self-antigens. The association between respiratory viral infections, including coronaviruses, and the development of islet autoimmunity is acknowledged, and this suggest that in genetically susceptible individuals SARS-CoV-2 may trigger TD1. Eating disorders and autoimmune diseases share immunopathological mechanisms suggesting a bidirectional relationship in a new intriguing hypothesis [5]. It would seem to exist a circular relationship between COVID-19, diabetes mellitus and eating disorders. Putting together the above observations, it seems legitimate to hypothesize that the increased risk of developing diabetes and/or an eating disorder may find common ground also in COVID-19-induced autoimmune aggression mechanisms. The current pandemic poses new challenges for the management of these conditions and may lead to an increase in their prevalence, a deeper understanding of the commonalities and differences on the role of SARS-CoV-2 infection in the pathogenesis of TD1, eating disorders and autoimmunity will accelerate progress toward early diagnosis, targeted treatment approaches and prevention.

Funding This research received no funding.

Declarations

Conflict of interest The authors have nothing to disclose.

Ethical approval The study was carried out to appropriate ethical standards.

Informed consent Informed consent was not required for this type of study.

This comment refers to the article available online at <https://doi.org/10.1007/s00592-022-01867-2>.

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