Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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Letter to the editor: The placenta and COVID-19

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Abbreviations

ACE2 Angiotensin-converting enzyme type-2
COVID-19 CoronaVirus Infectious Disease
SARS-CoV-2 Severe acute respiratory syndrome coronavirus 2

Komine-Aizawa et al. [1] recommended further examination of placental tissues from delivering mothers with COVID-19. In fact, examining tissues of maternal-fetal interface and placenta specimens from COVID-19 patients would provide more understanding about COVID-19 pathology in pregnant women, possible vertical transmission and therapeutic modalities for COVID-19.

ACE 2 receptors, that SARS-CoV-2 mainly uses to enter the cell, are expressed on tissues of the maternal-fetal interface (comprised of maternally derived decidua and fetally derived placenta) which might indicate a possibility of SARS-CoV-2 vertical transmission [2]. Although COVID-19 vertical transmission is controversial, there is evidence behind it [3]. Moreover, it has been demonstrated that uterine contraction and fetal demise are possible once uterine ACE 2 receptors are knocked out [4]. This may explain why some COVID-19 pregnant women have preterm deliveries and miscarriages [5]. Whether ACE 2 receptor play a role in SARS-CoV-2 possible vertical transmission and/or maternal morbidity need to be further investigated by examining tissues of maternal-fetal interface including placenta.

Furthermore, understanding the immunity of the maternal-fetal interface is imperative to speculate potential therapeutic modalities for COVID-19 patients. Cultured Human Placental Trophoblast cells showed resistance to number of RNA and DNA viruses [6]. This resistance was conferred to non-placental tissues which subsequently exhibited reduced viral replication by autophagy (self-eating) mechanism [6]. In addition, autophagy, can attenuate the inflammatory cascade that may accompany the pathogen infection [7]. Added together, meticulously studying the placental immunity might provide novel therapeutic strategies to viral and inflammatory diseases like COVID-19.

Informed consent

N/A.

Author contributions

Both Rasha Al-Lami and Ammar Algburi discussed Komine-Aizawa et al findings and participated in drafting and editing this manuscript.

Declaration of competing interest

None.

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