

## Proposal for radiologic diagnosis and follow-up of COVID-19 in pregnant women

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## Proposal for radiologic diagnosis and follow-up of COVID-19 in pregnant women

Dear Editor,

SARS-CoV-2 infection during pregnancy could have detrimental consequences both for the mother and the fetus, leading even to maternal death and/or to risk of premature delivery and fetal growth retardation [1].

Hence, early identification of affected pregnant women is mandatory. Methods as CT scan have been widely used in the diagnosis and follow-up of pregnant patients as for general population [2]. However, the risk of radiation exposure to the fetus must always be considered. Indeed, it exists only when the fetus is in the field of view (which can rarely happen during the third trimester); oppositely, there is only low-dose scattered radiation. Recently, lung ultrasound (LUS) encountered great interest, so that has been proposed as an accurate tool for diagnosis of COVID-19 pneumonia, with comparable reliability to CT scan in recognizing lung interstitial involvement [3]. Its sensitivity seems more than 90% and its specificity more than 95% [3]. Although various studies acknowledged the safety of the application of chest X-ray and CT in pregnancy, LUS appears as a useful diagnostic method to be applied in this subset of patients [4]. The recognition of its patterns has a fast learning curve, especially for Obstetricians and Gynecologists that practice ultrasonography in their clinical routine. Indeed, such method allows to assess eventual lung involvement, even at *early stages*, in suspected or confirmed cases, having multiple advantageous features for pregnant women: easily reproducible, it permits to avoid the risk of ionizing radiations, and can be performed *at bedside*, reducing the risk of contagion of various healthcare professionals [4]. Furthermore, it could be useful in the *follow-up* of patients diagnosed with pneumonia under medical treatment, to prevent them to undergo repeated chest CT scans. Given the good performance demonstrated by LUS in pregnant patients [3], we hypothesize that the latter could become a *first-line approach* to assess both *asymptomatic* patients and mildly symptomatic *suspected cases* or *contacts* of ill people, in order to overcome the risk of early false negative RT-PCR results, to avoid the risks of exposure to radiation for fetuses and to anticipate as much as possible the diagnosis, so to improve the management of pregnancies affected by COVID-19. Moreover, as another important advantage, LUS is a *quick* procedure, and could also be useful in those cases waiting for the response of both rapid immunoglobuline

testing or even RT-PCR swabs, which may take up to 24 h to give response, according to local resources. Accordingly, CT scan could be used only in severe cases as well as hospitalized patients to have a picture of lung involvement and to tailor the most appropriate therapeutic strategy. In addition, LUS application could replace CT scan also in the follow-up of pregnant patients confirmed to be positive for SARS-CoV-2, in order to decide when to hospitalize the patient and how the treatment is helping in the resolution of the case, or on the other side, if an elective urgent delivery is advisable, finally reducing the overall radiation dose delivered to the mother and the fetus. A small Italian case series has given initial data on the usefulness of LUS in pregnant women [5]. In conclusion, we propose the use of lung ultrasound for the management of pregnant women in any suspected or confirmed COVID-19 infection in light of its advantages and its good diagnostic accuracy as well as its safety profile. Obviously, trials to evaluate the prognostic role in this subset of patients are strongly urgently needed.

### Disclosure statement

No potential conflict of interest was reported by the author(s).

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