COVID-19 vaccine related menstrual irregularities: A cause of vaccine hesitation?

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To,
The Editor-in-Chief

Vaccination against Coronavirus Disease of 2019 (Covid-19) has shown remarkable progress in controlling the ongoing pandemic. Currently, over nine billion doses of Covid-19 vaccines have been administered worldwide(1), and although this widespread vaccination has shown great progress in managing the pandemic, multiple side effects have been noted. Most of these side effects are mild such as pain at injection site, fever, rash, etc., but some are serious and long-lasting like myocarditis and other cardiovascular complications.

Recently, there have been reports of several women experiencing menstrual irregularities after being administered Covid-19 vaccines, and that has created hesitation amongst women to get their shot.(2) Table 1. summarizes the number of menstrual disturbances recorded by Medicines and Healthcare products Regulatory Agency (MHRA) Yellow Card Scheme until 22nd December 2021.

While several factors have been implicated to be the cause of these irregularities, a definitive reason still remains to be established. A recent meta-analysis by Sharifian-Dorche M et al. has shown that Covid-19 vaccines induce thrombocytopenia.(3) This can result in the loss of endometrial haemostasis, and consequently, vaccinated women
might experience increased blood loss/heavy menstrual bleeding (HMB). Moreover, since body's immune system is activated by Covid-19 vaccines(4), immune cells lining the uterus can contribute to early shedding of uterine wall, and that may manifest as intermenstrual bleeding (IMB) or postmenopausal bleeding (PMB). Women who have recovered from Covid-19 infection continue to suffer from menstrual irregularities for prolonged times. Therefore, the possibility of Long Covid Syndrome causing these menstrual disturbances cannot be disregarded.(5) Additionally, the prevailing gender bias in pre-and post-covid literature has led to under-reporting of events related to female reproductive health, further limiting our understanding of this subject.

In conclusion, to minimize vaccine hesitation among women, it is imperative that a better understanding of these side effects should be sought. Further research should be encouraged to investigate vaccines' short- and long-term effects on reproductive health. Questions regarding menstrual cycle should be included in clinical trials for Covid-19 vaccines, and women should be encouraged to report any unusual post-vaccination changes in menstrual cycles to their doctors. Moreover, strict pharmacovigilance should be practiced to monitor people with pre-existing coagulopathies, and those on certain medications in order to limit the possibility of life-threatening conditions such as cerebral venous sinus thrombosis (CVST) after taking the Covid-19 vaccines. Lastly, to remove any mistrust, clinicians should inform women about all the risks and benefits of vaccination so they can make the right choice to protect themselves, and their families.

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1. Coronavirus (COVID-19) Vaccinations - Statistics and Research - Our World in


8. Date RR, Date DL, Uk A. COVID-19 AstraZeneca Vaccine Analysis Print Report Run Date : Data Lock Date : mean that it was caused by the vaccine, only that the reporter has a suspicion Case Series Drug Analysis Print Name : COVID-19 AstraZeneca Vaccine Analysis Print. 2021;1–105.
Table: Summary of menstrual irregularities in women living in UK by MHRA(6–8)

<table>
<thead>
<tr>
<th>Adverse Events</th>
<th>Number of Adverse Events Reported ($n$)**</th>
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<tbody>
<tr>
<td></td>
<td>Pfizer-BioNTech</td>
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<tr>
<td>Menstruation with Decreased Bleeding</td>
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<tr>
<td>Menstruation with Increased Bleeding</td>
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<tr>
<td>Intermenstrual Bleeding</td>
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<tr>
<td>Postmenopausal Bleeding</td>
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<tr>
<td>Other Menstrual Disorders</td>
<td>8533</td>
</tr>
</tbody>
</table>

**~51.1 million doses of Covid-19 vaccines have been administered to women in the UK until 22nd December, 2021