

For the attention of Trusts, Consultants and Doctors:

Covid vaccine second dose timing for blood cancer patients

Recent research shows that people with blood cancer may not have a good response to the first dose of the covid vaccine, and that they may benefit from getting a second dose more quickly.

We are aware that some hospital trusts are already choosing to give their blood cancer patients a second dose before 12 weeks, as per their clinical judgement.

Blood Cancer UK is now asking the JCVI to update its guidance to encourage doctors to choose when to give a second dose to their blood cancer patients.

We would encourage doctors and clinical teams to consider the information and studies presented here when arranging blood cancer patients' vaccines.

Research findings

While the vaccines generally provide healthy individuals with high-level short-term protection after just one dose (the rationale for prioritising first doses), this is not the case for blood cancer patients. Blood cancer patients' immune systems do not function normally, and they often do not mount a good response to vaccines. We expected this to be the case for covid vaccines as well, and data so far obtained confirm this, at least for the small number of patients so far examined.

The SOAP trial^{1,2}, run by King's College London and the Francis Crick Institute, published interim results in 2021. It found that three weeks after a first dose of the Pfizer vaccine, an antibody response that could neutralise the SARS coronavirus virus was seen in **less than one fifth (20%)** of people with blood cancer (compared with only **39%** of people with solid cancers and **97%** of people without cancer). When the second dose was given at this three-week point, **95%** of solid cancer patients went on to develop antibodies. But when the second dose was delayed, still less than half of cancer patients showed evidence of antibodies.

¹ <https://www.kcl.ac.uk/news/delaying-second-vaccine-dose-cancer-patients-vulnerable-virus>

² <https://www.medrxiv.org/content/10.1101/2021.03.17.21253131v1>



Too few blood cancer patients had a second dose to compare antibody levels at different timings specifically in this group. But, after faring much worse after the first dose, and seeing the profoundly positive impact of a second dose at three weeks on solid cancer patients, there is a clear case for considering that an earlier second dose could be really important for blood cancer patients.

These are the first results from a real-world study looking at vaccine effectiveness for cancer patients in the UK, and they show that vaccine effectiveness works differently in cancer patients than the general population. Dr Sheeba Irshad, Cancer Research UK clinical research fellow, King's College London, who led the trial together with Professor Adrian Hayday of the Francis Crick Institute, said: "Based on our findings, we would recommend an urgent review of the vaccine strategy for clinically extremely vulnerable groups."³ Blood Cancer UK is also seeking this review and is in contact with the JCVI.

The Green Book does already encourage clinical judgement about when to give vaccine doses. For example, in Chapter 14a on page 15⁴ it states:

"Individuals with immunosuppression may not make a full immune response to vaccination. As there is no evidence on response in immunosuppressed individuals there is also no evidence upon which to base advice on the optimal timing of delivery. Specialists may advise their patients based on their knowledge and understanding of their immune status and likely immune response to vaccination, but should also consider the risk from COVID-19 and the patient's likelihood of exposure."

The SOAP trial looked at vaccine response in 205 people who received the Pfizer vaccine, including 151 people with cancer. Of these, 56 had blood cancer. Most people in the study were older people, and around half of them had received treatment recently. Even though the study was relatively small it has now passed through stringent scientific peer review at Lancet Oncology, adding veracity to its concerning findings and emphasising the need for further research into this – something Blood Cancer UK is actively advocating and coordinating.

There is clearly an indication that an earlier second dose could help blood cancer patients – a population that already have one of the highest mortality rates from coronavirus.⁵

³ <https://www.kcl.ac.uk/news/delaying-second-vaccine-dose-cancer-patients-vulnerable-virus>

⁴ <https://www.gov.uk/government/publications/covid-19-the-green-book-chapter-14a>

⁵ <https://ashpublications.org/blood/article/136/25/2881/469789/Outcomes-of-patients-with-hematologic-malignancies>



Patients who are already approaching 12 weeks

At this point, many blood cancer patients who had their first vaccine dose in February are already approaching the 12-week mark. In this situation, we would still encourage doctors to consider bringing the second dose forward by whatever time frame is possible. Whilst we don't fully understand the optimum time to give blood cancer patients their second dose, as The Green Book quote above acknowledges, there are indications that earlier might be better. Accelerating full protection also limits the likelihood of infection and virus spread in health care facilities.

Get in touch

If you have any questions about this document, or what we know about blood cancer, coronavirus, covid vaccines and patient experience, please contact our Healthcare Professional Engagement team on hcpnetwork@bloodcancer.org.uk

Support for patients

Patients may be worried by reports of low vaccine efficacy in people with blood cancer or about their dosing schedule. Please signpost patients to Blood Cancer UK for further support. We can talk to people by phone, email, or social media.

Our support line is free to call on [0808 2080 888](tel:08082080888) or email support@bloodcancer.org.uk. Our website has up-to-date information about coronavirus and living with blood cancer at www.bloodcancer.org.uk

Blood Cancer UK Vaccine Task Force

Blood Cancer UK is the UK's blood cancer research charity. We are now working with researchers around the UK to coordinate and fund research into covid vaccine effectiveness in people with blood cancer: <https://bloodcancer.org.uk/research/the-blood-cancer-uk-vaccine-task-force/>

We work with the NHS and government to protect people with blood cancer. Recently we campaigned to see the JCVI and government change their advice and prioritise people who live with someone with blood cancer for the vaccine. We hope they will also now review the dosing guidance for people with cancer.



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