COVID-19-vaccination: AstraZeneca vaccine

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Executive summary

Health Council of the Netherlands

The ChAdOx1-S nCoV-19 vaccine against COVID-19 developed by the University of Oxford and the AstraZeneca pharmaceutical company (brand name COVID-19 Vaccine AstraZeneca) recently received a positive opinion by the European Medicines Agency (EMA) and was registered by the European Commission. This means that it can be used in the Netherlands to combat the COVID-19 pandemic. The Minister of Health, Welfare and Sport has asked the Health Council of the Netherlands for advice concerning the use of this vaccine in the various target groups that are eligible for vaccination. The Committee on the Medical Aspects of COVID-19 has assessed the vaccine, based on the criteria used by the Health Council as part of the vaccination advisory process.

COVID-19 involves a high burden of disease

When assessing the potential use of vaccination, the first criterion is that there must be a considerable burden of disease. That is clearly the case with COVID-19. By the end of January, the Dutch Municipal Health Service (GGD) had confirmed 956,867 cases of disease and 13,665 deaths from COVID-19. The risk of severe morbidity increases with age, and is also greater in those with a chronic disorder.

The vaccine is effective

Another criterion is that vaccination must be efficacious and effective. The vaccine is administered in two doses, four to twelve weeks apart. The ChAdOx1-S nCoV-19 vaccine's efficacy against COVID-19 has been tested in a group of over 10,000 people, half of whom received the vaccine and half a control vaccine. During a follow-up period of approximately two months, the vaccine was found to have an efficacy of approximately 60% in adults and medical risk groups. As yet, there is insufficient data available to calculate the vaccine's efficacy in individuals aged 56 and above. The vaccine does induce an immune response in this group, comparable to that seen in 18 to 55-year-olds. Accordingly, the Committee has assumed that the vaccine will be efficacious. As yet, nothing is known about the duration of protection nor about the extent to which vaccination might prevent viral transmission.

The vaccine is sufficiently safe – any adverse effects are usually mild

The safety of vaccination is another important criterion. The ChAdOx1-S nCoV-19 vaccine is sufficiently safe and is well-tolerated. Like all medicinal products, vaccines can have adverse effects. The purpose of vaccination is to induce a response from the immune system. This is often accompanied by associated transient

symptoms. Most of those who are vaccinated with the ChAdOx1-S nCoV-19 vaccine experience adverse effects. These are milder and less common after the second dose. The most common adverse effects were injection site tenderness and injection site pain, fatigue and headache. In terms of severity, the reactions were mainly mild to moderate, and they usually resolved within a few days.

Vaccination is acceptable – the benefits outweigh the drawbacks

In the Committee's view, the benefits of vaccination (health gains resulting from protection against COVID-19) outweigh the drawbacks (adverse effects that are usually mild and short-lived). Thus, the criterion of acceptability has also been met. Given the current lack of data concerning the cost-effectiveness of vaccination, this aspect cannot yet be assessed.

Recommendation – use the vaccine, starting with 60 to 64-year-olds (inclusive)

The Committee recommends the ChAdOx1-S nCoV-19 vaccine for use in public vaccination programmes against COVID-19, as the vaccine is efficacious, sufficiently safe, and acceptable. Due to the small number of older participants in the phase 3 trial, it is not yet possible to calculate the vaccine's efficacy in individuals aged 56 and above. However, the ChAdOx1-S nCoV-19 vaccine has been shown to induce an immune response in older adults. Accordingly, the Committee assumes that the vaccine is also sufficiently efficacious in this group. The immune system becomes less effective with advancing age (immunosenescence), so it is not clear whether the vaccine is sufficiently efficacious in older adults aged 65 and above. Thus, the Committee considers the vaccine to be suitable for use in adults up to the age of 65. To prevent as much severe morbidity and mortality as possible, the Committee recommends that the first available doses of the ChAdOx1-S nCoV-19 vaccine be used in older adults aged 60 to 64 (inclusive), starting with the oldest. Modelling shows that this approach will result in a lower burden of disease than if this group were to be vaccinated with an mRNA vaccine at a later point in time (i.e. after everyone aged 65 and above), in line with the current vaccination plan.

The Committee recommends that specific medical risk groups with an extra high risk should also be vaccinated. Some of these patients can be vaccinated with the ChAdOx1-S nCoV-19 vaccine. Patients with severely compromised immune systems should preferably be given an mRNA vaccine.

The Committee recommends that, once all older adults have been vaccinated, the ChAdOx1-S nCoV-19 vaccine should be used to vaccinate two groups with a similarly increased risk of severe COVID-19 morbidity: medical risk groups up to the age of 60, and individuals in the 50 to 60 age group. In both groups, vaccination should start with the oldest.

The Health Council of the Netherlands, established in 1902, is an independent scientific advisory body. Its remit is “to advise the government and Parliament on the current level of knowledge with respect to public health issues and health (services) research...” (Section 22, Health Act).
The Health Council receives most requests for advice from the Ministers of Health, Welfare and Sport, Infrastructure and Water Management, Social Affairs and Employment, and Agriculture, Nature and Food Quality. The Council can publish advisory reports on its own initiative. It usually does this in order to ask attention for developments or trends that are thought to be relevant to government policy.
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