Abstract

Title

Post-authorisation active surveillance of the Safety of COVID-19 Vaccine AstraZeneca (AZD1222) in the UK - A consortium study

Rationale and background

COVID-19 vaccines have undergone rapid development and testing due to the current global pandemic. There is a requirement to monitor the safety and effectiveness post authorisation, to supplement evidence from the pre-authorisation phase and to identify new emerging issues in a timely manner. For a COVID-19 vaccine, given the public health need for comprehensive assessment of effectiveness and safety, an active surveillance method is considered superior to passive methods of surveillance.

Research question and objectives

Overall aim:

To monitor the safety and utilisation of the COVID-19 Vaccine AstraZeneca (AZD1222) administered to vaccinees under real-world use in the UK

Primary objective:

- To examine the safety of COVID-19 vaccine AstraZeneca (AZD1222) through active surveillance of all vaccinee reported adverse events and assessment of incidence.

Secondary objectives:

- (i) To describe and characterise serious adverse events following vaccination.

- (ii) To describe and characterise adverse events of special interest (AESI) including AESI relevant to vaccinations in general and AESI for the COVID-19 vaccine AstraZeneca (AZD1222).

- (iii) To describe and characterise the utilisation of COVID-19 vaccine AstraZeneca (AZD1222) in the cohort, including vaccination site, demographics of vaccinee and brand/batch of vaccine administered.

- (iv) To examine use and safety in populations with missing information including pregnant and breastfeeding women and individuals with immunodeficiency disorders, treatment with immunosuppressants, concurrent medical conditions, and administration of other vaccines within previous 30 days.

Quality of life sub-study objective

(i) To describe and characterise health-related quality of life among a sub-population (n=3500) vaccinated by COVID-19 vaccine AstraZeneca (AZD1222) and to describe the effect of the COVID-19 vaccine AstraZeneca (AZD1222) on participant's lifestyle and productivity where affected by the COVID-19 pandemic.

Design

This study is a non-interventional post-authorisation active surveillance study to monitor the utilisation and safety of COVID-19 vaccine AstraZeneca (AZD1222) in the UK. Vaccinees will be recruited via the mass vaccination programme through various vaccination sites and other methods of recruitment will be used where appropriate (e.g. through social media, newspapers and local radio stations). Informed consent will be obtained. Baseline information and any symptom/condition following vaccination reported by the vaccinee will be collected. Further information related to serious and AESIs will be captured from General Practitioners (GPs) and/or healthcare professionals (HCPs) where appropriate. Vaccinees will be contacted at various time points through text message, email, or phone and asked whether they experienced an adverse event. If an adverse event has been reported by the vaccinee, they will be asked to provide further details via a questionnaire completed via an online portal. All data will be securely stored on the Drug Safety Research Unit (DSRU) database.

Population

Adults and children[1] vaccinated with COVID-19 vaccine AstraZeneca (AZD1222) launched during the mass vaccination programme in the UK.

Data sources

Questionnaires at baseline (information from time of vaccination) and pre-defined follow up points thereafter (weeks 1, 4, and 14 then months 6, 9, 12, and 18 following first vaccination dose) will collect information from vaccinees. Where any pregnancies are reported, follow up will be conducted at 12 months post last menstrual period for ascertainment of pregnancy outcomes. Further follow up at 24 months following delivery will be conducted to monitor for outcomes in babies. Follow up information may also be obtained from vaccinees and/or GPs/Healthcare Professionals (HCPs) if serious or selected adverse events are reported. In order to validate data obtained from vaccinees, questionnaires will also be sent to GPs for a

[1] Although the current guidance does not include children below the age of 16 years, we will include this group if they have received the vaccine.

random sample of vaccinees who have not reported adverse events in order to confirm that no events occurred.

Sample size

A minimum sample size of 10,000 vaccinees.

Data analysis

Monthly summary reports will be produced.
Interim reports will be produced at months 1 (or at the first 1,000 vaccinees, whichever comes first), 3 (or at the first 5,000 vaccinees), 6 (or at the first 10,000 vaccinees), 12, 18 and 24. Findings will also be summarised in a final report. Summary descriptive statistics including age, gender and specific co-morbidities/conditions (e.g. sub-populations of interest) reported on questionnaires will be presented, alongside event frequencies.

Observed vs expected analysis will be performed for selected AESIs (where appropriate background rate information is available) at regular intervals (at least every 3 months) throughout the study. For the final report, cumulative incidence risk and rates will be calculated with 95% confidence intervals. Time to onset analyses will be performed for AESI and serious adverse events where a sufficient number of events are reported. Descriptive statistics will be used for other outcome measures.