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P0399 Safety and immunogenicity of 2-dose Ebola vaccine regimen with Ad26.ZEBOV and MVA-BN-Filo in a phase II clinical trial in Europe (EBOVAC2)

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Background: The West African 2014–16 Ebola epidemic highlights the need for safe and effective Ebola vaccines. A heterologous Ebola vaccine regimen based on Ad26.ZEBOV (Ad26) and MVA-BN®-Filo (MVA) is in Phase 3 development.

Here we report results of a Phase 2 study (EBL2001) funded by the European Commission Innovative Medicines Initiative under EBOVAC 2 in which we evaluated safety and immunogenicity of a heterologous 2-dose Ad26, MVA regimen in healthy adults in Europe.

Materials/methods: In this randomized, multicentre trial, volunteers (aged ≥18 to ≤65) from UK and France received Ad26 (dose 1), MVA (dose 2) vaccination or placebo at different intervals: 28, 56 or 84 days.

Serious adverse events (AE) were assessed until the end of the study, AEs until 42 days post-dose 2, and solicited AEs until 7 days after each dose.

Binding antibodies measured by validated EBOV GP FANG ELISA assay with lower limit of quantification were assessed at different intervals up to one year post-dose 1 and reported as Geometric Mean Concentration (GMC).

Results: Healthy adult volunteers (N=421) were vaccinated with either an active regimen (N=375) or placebo (N=46).

The 2-dose Ad26, MVA vaccination was well tolerated with no safety signals identified. A single possibly vaccine-related SAE of a small fiber neuropathy was reported.

On Day 21 post-dose 2, irrespective of the vaccination interval >98% of all subjects were responders (defined as 2.5x over a positive baseline or 2.5x over LLOQ). Higher GMCs were measured in subjects vaccinated with a 56 and 84 day interval (10131 and 11312 ELISA units/mL, respectively [95% CI: 8554; 11999 and 9072; 14106]) compared to the 28 day interval group (4627 ELISA units/mL, [95% CI: 3649; 5867]). One year post-dose 1, GMCs were 1205 and 1149 ELISA units/mL for the 0, 56 and 0, 28 regimens, respectively (Figure).

Conclusions: The Ad26, MVA vaccine regimens were found to be well tolerated and immunogenic. Binding antibody responses persisted at least up to one year post-dose 1. This study supports the further development of Ad26, MVA heterologous 2-dose vaccination for the prevention of Ebola Virus Disease.

EBL2001: Binding Antibody Responses (EBOV GP FANG ELISA; ELISA units/mL)