POSTER 14

Safety & Immunogenicity of Ebola Vaccine Candidates: A Systematic Review

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Background

34 outbreaks later, Ebola virus still carries an unchanged fatality rate of up to 90% as a haemorrhagic, infectious disease. This systematic review endeavoured to analyse the safety and immunogenicity of the main vaccine candidates: rVSV-ZEBOV; ChAd3-EBO ± MVA-BN; Ad26.ZEBOV + MVA-BN.

Methods

Studies were searched for across peer reviewed literature and trial databases (Embase, Medline, Scopus). Human studies published in English from 2010 were included. Studies underwent eligibility and bias assessment prior to data extraction. Adverse events (AEs) were recorded as well as geometric mean antibody titres.

Results

20 studies were qualitatively included and 11 were suitable for meta-analysis. Locally, mild/moderate injection site pain had the highest case number with AD26.ZEBOV recording the greatest prevalence (68.2%). There was an increased, significant risk of local AEs with vaccine usage against placebo overall (9 studies: relative risk [RR], 1.82, [95%CL 1.43-2.20]). Systemically, the greatest incidence was mild/moderate headaches, highest being in Ad26.ZEBOV(55.4%) with a statistically significant increase in AEs observed across all vaccine types against placebo (10 studies: RR, 1.42 [1.34-1.50]).

rVSV-ZEBOV produced the greatest glycoprotein-specific response to 360 days which may be significant compared to the other vaccines. At 360 days, rVSV-ZEBOV may produce significantly higher neutralisation antibody levels (NA) than Ad26.ZEBOV. Only rVSV-ZEBOV underwent meta-analysis for NA and it significantly increased antibody production against placebo (5 studies: Hedges' g, -1.17 [95% CL -1.28- -1.06]).

Key Messages

The vaccine candidates are safe to use and reveal immunogenicity profiles against EVD. NA data should be gathered so a complete immunogenicity profile can be made of all candidate vaccines.

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