Modified Vaccinia Virus Ankara booster expressing antigen 85A for protection against active Tuberculosis and death in animals: A systematic review

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In 2011, Tuberculosis (TB) affected close to nine million people resulting in death in 1,400 000. Protection against TB by BCG in adults ranges from 0 to 80%.

A new vaccine would either replace BCG as a primary vaccine or boost it. This review summarised preclinical evidence of efficacy of boosting BCG with MVA85A compared to BCG alone on protection against active TB and death. Using a comprehensive search strategy we searched MEDLINE, EMBASE, Web of science, and Biosis until May 2013 and contacted experts in the field.

Seven studies with limited methodological description, using between 175 and 190 different animals, met the predefined inclusion criteria.

Survival ranged from no deaths to 83% dying at 40 weeks post vaccination after MVA85A boosting compared to 33%% in the BCG group. There were no clear statistical significant differences in pathology and bacteriology reduction except after using intranasal administration in one study.

There is insufficient data to determine if MVA85A provides additional benefits to BCG vaccination. Reporting guidelines for animal studies should be reinforced and adhered to.