**NOVEL MULTIVALENT MVA-BN-RSV VACCINE INDUCES BROAD HUMORAL AND CELLULAR IMMUNE RESPONSES**

**BACKGROUND**

MVA-BN-RSV was designed to induce RSV-specific immune responses against 5 RSV proteins (F, G [A and B subtype], H2 and Hn), based on an established, safe viral vector. We present clinical phase 1, phase 2 and annual boosting results.

**RESULTS**

MVA-BN-RSV elicited broad, dose-dependent, RSV-specific cellular and antibody immune responses, which could be boosted after 1 year. Serum antibody assays showed highest fold-increases after administration of 5x10^8 Inf.U., with GMFI ranging from 1.6 (RSV[α PRINT] to 3.4 (γ伽 ELISA). GMFI of 1.4 was detected for mucosal IgA responses (5x10^6 Inf.U.). Cellular immune responses were achieved against all encoded RSV proteins, with 65% of subjects responding to all 5 proteins (5x10^8 Inf.U.). No relevant differences were observed between age groups.

**CONCLUSIONS**

MVA-BN-RSV induced broad and robust humoral and cellular immune responses, thus appears to be mimicking a natural response to RSV infection. Data from the 1-year extension study support a durable response lasting ≥6 months and suggest a seasonal vaccination approach.

**METHODS**

Healthy subjects of different age groups were enrolled in Phase 1 (N=43; 18-49, 50-65 years) and Phase 2 (N=420) (55-69, >70) years). They received either 1 or 2 doses of MVA-BN-RSV vaccine (1x10^7, 1x10^8, 5x10^8 Inf.U./0.5 mL, per dose), MVA or placebo.

- **Phase 1 trial**: A safety study with 63 subjects in three groups receiving 1 dose of vaccine or placebo at Day 0 and Day 28. Elicitation was assessed through immune responses from PBMC preparation. Subjects had varying levels of immune response, with 65% of subjects responding to all 5 proteins (5x10^8 Inf.U.).

- **Phase 2 trial**: A dose-finding study in a total of 420 subjects (55 years with 5 treatment groups receiving 2 doses (0.5, 1.0, 2.0 mL) at Day 0 and Day 28 as follows: Group 1: 1x10^6 Inf.U./placebo; Group 2: 1x10^6 Inf.U./1x10^6 Inf.U.; Group 3: 5x10^6 Inf.U./placebo; Group 4: 5x10^6 Inf.U./5x10^6 Inf.U.; Group 5: placebo./placebo).

- **Age groups**: IgG ELISA responses (Week 0 & 2; left) and GMT (IgG ELISA) (week 2; right).

**ACKNOWLEDGEMENT**

We thank all the participants who participated in the trial and their families. This study was sponsored by Bavarian Nordic.

**BAVARIAN NORDIC**

MARTINSRIED, GERMANY, 3400 KVISTGAARD, DENMARK

This poster contains scientific and medical information, research findings, and data supporting the use of MVA-BN-RSV vaccine for the prevention of respiratory syncytial virus (RSV) infection. The study was conducted in multiple phases, each involving different cohorts of participants to evaluate the vaccine's safety and immunogenicity. The vaccine was designed to elicit broad, dose-dependent immune responses, which were further enhanced through annual boosting. The results suggest that MVA-BN-RSV could be a promising candidate for a seasonal vaccination approach, potentially mimicking a natural immune response to RSV infection. Further studies are needed to confirm these findings and to determine the vaccine's efficacy in clinical settings.