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IMMUNIZATION WITH SURFACE IMMUNOGENIC PROTEIN INDUCES A DECREASE OF VAGINAL COLONIZATION BY GROUP B STREPTOCOCCUS IN AN EXPERIMENTAL MOUSE MODEL

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The Group B streptococcus (GBS) is the leading cause of neonatal sepsis and meningitis in developed countries and an emerging pathogen in adults. A neonatal infection occurs predominantly during the delivery by either inhalation or ingestion of contaminated secretions of the mother’s vagina. Maternal screening by rectovaginal GBS colonization at 35–37 weeks of gestation, with subsequent intra-partum antibiotic prophylaxis (IAP) at the onset of labor, is implemented in some countries to prevent newborn invasive by GBS. Currently, there are not vaccines to prevent the devastating consequences of GBS and a glycoconjugate vaccine is under clinical experimentation (Clinical Trials Phase III).

The Surface Immunological Protein (SIP) of GBS is highly immunogenic and conserved between different serotypes of this bacterium. The SIP had been described to induce antibodies type IgG that induces protective immunity in animal model challenged intraperitoneally with GBS.

Here we describe the immunization with SIP mixed with an AbISCO-100 adjuvant in mice model challenged to GBS vaginal infection. The vaccine has demonstrated to decrease the GBS colonization in infected mice. The SIP immunization has also increased the circulating IgA, IgG challenged to GBS vaginal infection. The vaccine has demonstrated to decrease the GBS colonization in both experimental groups. We observed a low level of GBS vaginal colonization in both experimental groups.

RESULTS

The rSIP protein was purified and formulated with AbISCO like vaccine prototype. We observed that both experimental groups immunized with rSIP-AbISCO and rSIP alone decreased the GBS vaginal colonization compared with others experimental groups (Figures 1-6). Furthermore, our data suggest that the immune response induced by our vaccine is balanced (cellular/humoral), but with a tendency towards a cellular immune response (Figures 7-8).

CONCLUSIONS

- Our vaccine formulation is able to prevent GBS vaginal colonization in murine model, and we observed balanced Th1/Th2 immune response but with a tendency to cell type response.
- We analyzed passive immunity transfer. Healthy mice were infused with serum or a mixture of CD4/CD8 cells and then challenged with GBS. We observed a low level of GBS vaginal colonization in both experimental groups.
- Our experimental model may be useful by testing new vaccine formulation.

REFERENCES