

EFFECTIVENESS OF A GROUP B OMV MENINGOCOCCAL VACCINE IN PREVENTING HOSPITALISATION FROM GONORRHOEA IN NEW ZEALAND – COHORT STUDY

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Introduction:

Ecological data from outer membrane vesicle (OMV) meningococcal group B vaccine surveillance suggest cross-protection for gonorrhoea, as confirmed by a case control study indicating a 31% effectiveness of the New Zealand (NZ) strain-specific OMV MeNZB™ vaccine against outpatient visits for gonorrhoea. Here we estimate the effectiveness of this vaccine against gonorrhoea associated hospitalisation in a retrospective cohort study in the same population.

Methods:

The cohort consisted of individuals born 1984-1999 residing in NZ, and therefore eligible for meningococcal B vaccination during 2004-2008. Demographic, NZ Customs, hospitalisation, educational, income tax and immunisation datasets were linked using the national Integrated Data Infrastructure. The primary outcome was hospitalisation with a primary diagnosis of gonorrhoea. Cox's proportional hazards models were applied with a Firth correction for rare outcomes to generate estimates of hazard ratios. Vaccine effectiveness estimates were calculated as 1-Hazard Ratio expressed as percent.

Results:

After adjustment for sex, ethnicity and deprivation we found vaccine effectiveness (MeNZB™) against hospitalisation caused by gonorrhoea was estimated to be 24% (95% CI 1-42%).

Conclusion:

Vaccination with MeNZB™ significantly reduced the rate of hospitalisation from gonorrhoea. This supports prior research indicating possible cross protection of this vaccine against gonorrhoea acquisition and disease in the outpatient setting. Given the inequitable burden of gonorrhoea on indigenous Māori and those living in more deprived circumstances this vaccine has the potential to improve equity in health and well-being in these populations.

Disclosure of Interest Statement:

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The results in this paper are not official statistics, they have been created for research purposes from the Integrated Data Infrastructure (IDI), managed by

Statistics New Zealand. The opinions, findings, recommendations, and conclusions expressed in this paper are those of the author, not Statistics NZ. Access to the anonymised data used in this study was provided by Statistics NZ in accordance with security and confidentiality provisions of the Statistics Act 1975. Only people authorised by the Statistics Act 1975 are allowed to see data about a particular person, household, business, or organisation, and the results in this paper have been made confidential to protect these groups from identification. Careful consideration has been given to the privacy, security, and confidentiality issues associated with using administrative and survey data in the IDI. Further detail can be found in the Privacy impact assessment for the Integrated Data Infrastructure available from www.stats.govt.nz.