P–29; **MODELLING THE CLINICAL IMPACT OF CROSS-PROTECTION LEVELS IN CERVICAL CANCER VACCINES IN POLAND**

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Background and Aim: Two vaccines against cervical cancer are now available with proven efficacy against different HPV-types. Preliminary evidence of non-vaccine HPV-type cross-protection has been shown. One vaccine is formulated with an innovative AS04 adjuvant, specifically reporting protection against HPV-45. Using a mathematical model we aimed to understand the extent to which different levels of cross-protection could have an effect on clinical outcomes.

Methods: A lifetime Markov model replicating the natural history of HPV infection and cervical cancer within current treatment practice was developed with the following health states: Normal, HPV infection, Cervical Intraepithelial Neoplasia (CIN), Cervical Cancer (CC) and death. The model was adjusted to Polish epidemiological data and screening practices. A lifetime analysis of a cohort of 240,000 girls vaccinated at age 12 was conducted using published efficacy against HPV-16/18 (95%) and a range of efficacy against non-vaccine oncogenic HPV-types from 0–50%. The investigated outcomes included number of CIN lesions, CC cases and CC-related deaths.

Results: The model predicted that without vaccination the cohort would experience over lifetime 118,907 CIN lesions; 3,340 CC cases and 2,061 CC deaths. With cross protection levels of 0%, 25%, 50%, vaccination was predicted to reduce this disease burden by 30,188; 51,635; 73,249 CIN lesions; 2,100; 2,366; 2,638 CC cases and 1,297; 1,461; 1,629 CC deaths respectively. Compared with 0% cross-protection, cross protection at 25% or 50% was predicted to result in an additional 164 and 332 lives saved respectively.

Conclusions: In a Polish setting, broader cross-protection against non-vaccine HPV types is predicted to result in substantial health benefits. Cross-protection is therefore an important vaccine characteristic that should be considered when assessing a vaccine's effectiveness against cervical disease-related morbidity and mortality.