

Abstract

Effectiveness of Previous Mumps Vaccination During the 2014-2015 Outbreak in Lebanon

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Abstract

Background: In Lebanon, MMR was introduced at 12 months and 4-5 years in 1996. In 2014, the 2nd MMR dose was shifted to 18 months with 79% coverage; a six-fold increase in mumps national incidence was observed in December.

Objective: This study aims to determine mumps vaccine effectiveness (VE) among Lebanese population to guide immunization policies.

Methods: Clinical and confirmed mumps cases reported to Epidemiological Surveillance Program between 2014W46 and 2015W11 were eligible if Lebanese and aged 1.5 to 19 years-old. They were matched 1:1 on age and locality to randomly selected controls using phonebook of the same area. Information was collected by structured phone interviews. Mumps vaccination status was based on documented valid dates for MMR doses. Data were entered using Epidata 3 and analyzed using Stata 13. VE [(1-OR) x100] of one and two doses and ORs (95% CI) for acquiring mumps were estimated using conditional logistic regression.

Results: 91 cases and 91 controls were included. Only 36% of cases had vaccination cards, compared to 71% of controls ($P<0.001$), and 94% of cases were not vaccinated compared to 51% of controls ($P<0.001$). Vaccine effectiveness was estimated 60% (CI -27%: 88%) for one dose and 88% (CI 60%: 96%) for 2 doses.

Conclusions: Two-doses of MMR vaccine were estimated as 88% effective against mumps, similar to results found in the literature. Suboptimal MMR2 coverage can explain this outbreak. Efforts should focus on achieving high MMR coverage and raising population's awareness about preserving documentation of vaccination.

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