Early influenza vaccine effectiveness: a good proxy for final estimates in Spain in the last four seasons 2010 - 2014

Authors
Silvia Jiménez-Jorge (1, contact author), S. de Mateo (2), C. Delgado (3), F. Pozo (4), A. Larrauri (5), Spanish cycEVA team group on behalf of the Spanish Influenza Sentinel Surveillance System (SISS)

Affiliations
1. PhD, National Center of Epidemiology, ISCIII, Madrid-Spain; Ciber Epidemiología y Salud Pública (CIBERESP), Ministerio de Economía y Competitividad, ISCIII, Madrid-Spain. sjimenezj@isciii.es (contact author)
2. MD, PhD, National Center of Epidemiology, ISCIII, Madrid-Spain; Ciber Epidemiología y Salud Pública (CIBERESP), Ministerio de Economía y Competitividad, ISCIII, Madrid- Spain. smateo@isciii.es
3. MD, National Center of Epidemiology, ISCIII, Madrid-Spain; Ciber Epidemiología y Salud Pública (CIBERESP), Ministerio de Economía y Competitividad, ISCIII, Madrid-Spain. cdelgados@isciii.es
4. PhD, National Center of Microbiology, ISCIII, Madrid-Spain. ppozo@isciii.es
5. PhD, National Center of Epidemiology, ISCIII, Madrid-Spain; Ciber Epidemiología y Salud Pública (CIBERESP), Ministerio de Economía y Competitividad, ISCIII, Madrid- Spain. alarrauri@isciii.es

Early estimates of influenza VE can help to guide health authorities in influenza prevention and provide useful information for the WHO strain selection process. The agreement between early and final influenza VE estimates would support the use of interim assessments as a proxy for final VE results. The objective was to compare early and final VE estimates in Spain in the last four influenza seasons.

We carried out two test-negative case-control studies using data from the observational cycEVA study and from the Spanish Influenza Sentinel Surveillance System (SISS) for 2010/11 to 2013/14. We compared early and final adjusted VE estimates obtained with cycEVA (real-time) and SISS (retrospectively). Sensitivity analyses were carried out by influenza type/subtype and by population (entire/targeted for vaccination).

Early influenza vaccine coverage was ±1% of the final values, except for 2011-12 with decreasing coverage (2-3%) in both studies. The percentage of population targeted for vaccination included into the early analysis changed to the final analysis (range of change: 4-18%). Differences among early/final estimates ranged 4-11% (cycEVA) and 3-9% (SISS) for the entire population and 2-31% (cycEVA) and 6-14% (SISS) for those targeted for vaccination. In general, early A(H1N1)pdm09 and A(H3N2) estimates were higher than final estimates.

In Spain, early VE estimates over 2010 – 2014 seasons were a good proxy of the final protective effect of the vaccine. Differences among early and final estimates were lower for the entire population compared to those targeted for vaccination using cycEVA and SISS. In general, early estimates were higher than final for A(H1N1)pdm09 and A(H3N2) viruses. Differences observed could be explained for differences in the characteristics of the study population (early and end-season).

Influenza, vaccine effectiveness, case-control studies, sentinel networks