At its meeting on 12 December 2013, GACVS reviewed evidence related to autoimmune disease and the HPV vaccine, with a focus on multiple sclerosis (MS). The last review was conducted in June 2013, where the Committee reviewed updated data from the United States, Australia, Japan and the manufacturers of Cervarix® (GlaxoSmithKline) and Gardasil® (Merck). With >175 million doses distributed worldwide and more countries offering the vaccine through national immunization programmes, the Committee continued to be reassured by the safety profile of the available products. Serious adverse events that have been reported as potential signals have been investigated in more detail and were not confirmed, including Guillain-Barré syndrome, seizures, stroke, venous thromboembolism, anaphylaxis and other allergic reactions. Surveillance of pregnancy outcomes among women inadvertently vaccinated during pregnancy through spontaneous reports and registries have not detected any adverse outcomes above expected rates.

While surveillance data and epidemiologic studies on HPV vaccine have continued to reassure, allegations have continued to surface in the media and elsewhere about the safety of the vaccine. Epidemiologic studies before and after licensure showed no increased risk of autoimmune disease, including MS. All along, such diseases have been under particularly careful investigation given their correspondingly high age-specific background incidence[1-3].

Examples of such studies include a register-based cohort study in Sweden and Finland that included almost 1 million girls aged 10-17 years, among whom close to 300,000 were vaccinated against HPV[4]. The study investigated whether vaccination was associated with an increased risk of autoimmune, neurological and thromboembolic events. The study results did not show evidence supporting associations between exposure to HPV vaccine and autoimmune, neurological, and venous thromboembolic adverse events.

In the U.S., an observational study involving close to 200,000 girls and young women who had received at least one dose of HPV vaccine found no increased incidence of 16 investigated autoimmune diseases in the vaccinated compared to the non-vaccinated group[5]. The incidence of MS in the vaccinated cohort, for example, was not significantly higher than the non-vaccinated cohort (incidence rate ratio 1.37, 95% confidence interval 0.74 to 2.20). In a third study, a pooled analysis of data from 11 clinical trials involving nearly 30,000 participants over 10 years of age, of which 16,142 received at least one dose of Cervarix® and 13,811 received either a placebo containing aluminum hydroxide or one of 2 different hepatitis A vaccines. No increased risk for the onset of autoimmune diseases after administration of Cervarix® was observed in comparison to the control group[6].

The committee was provided with an overview of cases that were the subject of concern in France. These included one case of MS that had been adjudicated by a French Regional Commission for Conciliation and Compensation (CRCI). Another 14 cases of MS were reported through regional pharmacovigilance centres and/or the manufacturers to the European Medicines Agency. All 15 cases had been classified of “doubtful” causality, according to the French grading system[7].
In addition, the overview from France included results of a cohort study involving 2 million girls aged 12 to 16 showing a lack of increase in hospitalization rates for auto-immune diseases among those who received the HPV vaccine (2.1/10,000 patients/year) compared to those who did not (2.09/10,000 patients/year).

In summary, GACVS was presented with a series of cases of adverse events following the HPV vaccine. Multiple studies have demonstrated no increase in risk of autoimmune diseases, including MS, among girls who received HPV vaccine compared to those who had not. The Committee continues to be reassured by the safety profile of the vaccine, but notes the importance of continued surveillance and epidemiological investigation with an emphasis on the collection of high quality data; such data are essential for interpreting adverse events which occur following vaccination. Allegations of harm from vaccination based on incomplete information can lead to real harm when, as a result, effective vaccines are not used.
References


