

## HPV vaccination syndrome. A questionnaire-based study

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### Abstract

Isolated cases and small series have described the development of complex regional pain syndrome, postural orthostatic tachycardia, and fibromyalgia after human papillomavirus (HPV) vaccination. These illnesses are difficult to diagnose and have overlapping clinical features. Small fiber neuropathy and dysautonomia may play a major role in the pathogenesis of these entities. We used the following validated questionnaires to appraise the chronic illness that might appear after HPV vaccination: The 2010 American College of Rheumatology Fibromyalgia Diagnostic Criteria, COMPASS 31 dysautonomia questionnaire, and S-LANSS neuropathic pain form. These questionnaires and a "present illness" survey were e-mailed to persons who had the onset of a chronic ailment soon after HPV vaccination. Forty-five filled questionnaires from individuals living in 13 different countries were collected in a month's period. Mean ( $\pm$ SD) age at vaccination time was  $14 \pm 5$  years. Twenty-nine percent of the cases had immediate (within 24 h) post-vaccination illness onset. The most common presenting complaints were musculoskeletal pain (66%), fatigue (57%), headache (57%), dizziness/vertigo (43%), and paresthesias/allodynia (36%). Fifty-three percent of affected individuals fulfill the fibromyalgia criteria. COMPASS-31 score was  $43 \pm 21$ , implying advanced autonomic dysfunction. Eighty-three percent of the patients who had ongoing pain displayed S-LANSS values  $>12$ , suggesting a neuropathic component in their pain experience. After a mean period of  $4.2 \pm 2.5$  years post-vaccination, 93% of patients continue to have incapacitating symptoms and remain unable to attend school or work. In conclusion, a disabling syndrome of chronic neuropathic pain, fatigue, and autonomic dysfunction may appear after HPV vaccination.

**Keywords:** Complex regional pain syndrome; Dysautonomia; Fibromyalgia; Gulf War Illness; HPV vaccine; Myalgic encephalomyelitis; Small fiber neuropathy.