□ LETTERS TO THE EDITOR □

Peripheral Sympathetic Nerve Dysfunction in Adolescent Japanese Girls Following Immunization with the Human Papillomavirus Vaccine

Key words: human papillomavirus vaccine, adverse event following immunization, a complex regional pain syndrome, orthostatic hypotension, postural orthostatic tachycardia syndrome, sympathetic nerve dysfunction

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The Authors Reply We greatly appreciate your useful comments on our recent paper indicating a possible relationship between human papillomavirus (HPV) vaccination and various neurological manifestations (1). To be exact, HPV vaccination in Japan is completely voluntary and not legally required; however, in practice both the local government and public schools have strongly recommended this vaccination for Japanese adolescent girls since the middle of June 2013. Thus, more than 8 million Japanese girls have received this expensive vaccine at no charge.

The aim of this paper was to describe precisely the variety of neurological symptoms which were seen in the Japanese girls immunized with the HPV vaccine and to investigate the pathophysiological conditions in these girls, whose parents complained that these neurological manifestations were adverse reactions of HPV vaccination. Hanley et al. point out that orthostatic hypotension (OH), postural orthostatic tachycardia syndrome (POTS) or complex regional pain syndrome (CRPS) have peak occurrence in adolescent girls; thus, it is not significant that high frequencies of these disorders was observed in some of the post-vaccinated girls (2). Although it is well known that each autonomic symptom is non-specific, we noted the combination of these symptoms, such as OH with CRPS or POTS with CRPS, and also observed decreased skin temperature and abnormal digital plethysmograms in these girls. To address the causative relationship between these neurological symptoms and HPV vaccination, a large-scaled cohort study is necessary for girls who did or did not receive HPV vaccination.

Recently, another Japanese group has proposed a new disease entity: human papillomavirus vaccination associated with neuroimmunopathic syndrome (HANS) (3). This disease entity emphasizes the appearance of a central nervous system disorder with memory impairment in addition to widespread pain, arthralgia and chronic fatigue. Furthermore, some patients with HANS may exhibit abnormal findings on single photon emission computed tomography (SPECT) of the brain (4). Menstrual abnormality with amenorrhea was also noted, leading to one important criterion for the diagnosis of HANS. A few foreign countries reported similar symptoms after HPV vaccination (5). A recent report from the Danish Health and Medicines Authority describes many suspected adverse drug reactions from the HPV vaccine in which POTS was listed (6). Neurological manifestations seen in the post-vaccinated girls appear to be more complicated than previously recognized and further extensive examinations are required.

The authors state that they have no Conflict of Interest (COI).

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