

Wide Use of Merthiolate May Cause Mercury Poisoning in Mexico

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In 1999, Merthiolate (Thimerosal, Thiomersal), an ethylmercurythiosalicylate preservative, was suddenly spotlighted on the grounds that vaccines containing the preservative might increase the risk of autism and/or other neurodevelopmental disorders (Ball et al. 1999). On the basis of current evidence, however, some of investigators consider it improbable that Merthiolate and autism are linked (Nelson and Bauman 2003). On the other hand, Merthiolate had also been widely used as an antiseptic agent, and is still in daily use mainly as a skin antiseptic especially in developing countries, although there is a downward trend. Indeed, in Mexico Merthiolate had been widely employed as disinfectant for the skin or wound surface in hospitals or clinics in the early 1990s. Therefore, we attempted to examine mercury levels in head hair from Mexican staff engaged in medical service in 1991 and 1992, because ethylmercury has some similarities to methylmercury (Clarkson et al. 2003), of which toxicity is well known as Minamata disease (Harada 1995). In addition, they have continued to use Merthiolate as disinfectant until the present, although the use is also on the decrease. Thus, we report here mercury levels in head hair collected from Mexican medical staff in the early 1990s, albeit rather antiquated.

MATERIALS AND METHODS

In 1991, 12 head hair samples were collected from nurses working in a general hospital (Toluca, Mexico) using Merthiolate. Each hair sample was cut as close to the scalp for both total mercury (T-Hg) and methylmercury (MeHg) analyses. Although MeHg has no direct bearing upon Merthiolate, namely, ethylmercury, we determined the MeHg level for reference. As a result, as mentioned later, seven out of 12 samples showed a high T-Hg level, but the ratio of MeHg to T-Hg was very low. Accordingly, the next year we further measured T-Hg levels, but not MeHg level because of the above low level, in head hair from 27 medical doctors, 34 nurses, and two others (an office worker and an expert of clinical examination) working in three general hospitals also using Merthiolate in Mexico City. In addition, we inquired their subjective symptoms. Informed consent was obtained from all subjects, based upon the Declaration of Helsinki, 1964.