Sir—In May 1996, the New Mexico Department of Health reported one case of mercury poisoning associated with the use of a beauty lotion produced in Mexico. The lotion, marketed as ‘Crema de Belleza’, listed calomel as an ingredient without indicating its concentration. Laboratory testing by the National Public Health Laboratory in Tamaulipas, Mexico, showed that the lotion contained 6–10% mercury by weight.1

We performed a cross-sectional study at three Women, Infant and Children’s (WIC) clinics in Dona Ana County, New Mexico. Our goals were to determine the prevalence of lotion use in selected New Mexico–Mexico border communities, to determine whether lotion users had excessive amounts of mercury in their urine, and to document reported adverse health effects associated with lotion use. The clinics were chosen because of their location near the US–Mexico border and the large number of patients typically seen at each clinic. Using a brief prescreening questionnaire, we interviewed all 185 women who visited the three WIC clinics over a 3-day period to identify users of the lotion. Using a structured questionnaire, we interviewed the five women who identified themselves as current users of the lotion and selected a convenience sample of 20 women who identified themselves as non-users in order to obtain comparison data. Current users were arbitrarily defined as people who had applied the lotion to their skin within the previous year. All others were defined as non-users.

The questionnaire requested demographic information, as well as information about the duration and frequency of lotion use, other potential sources of mercury exposure and symptoms associated with mercury toxicity.2 We collected spot urine samples from 23 of the 25 participants. Urine samples were analysed for total mercury and creatinine.

The 25 study participants ranged in age from 18 to 56 years, with a median age of 31 years for users and 29.5 years for non-users. All participants were female; all users and 95% of non-users were of Hispanic origin. All users purchased the lotion from pharmacies in Mexico. The median duration of lotion use was 7 weeks, and the median frequency of use was seven times per week. Users most often applied the lotion to their face. We estimated the prevalence of lotion use among women attending the WIC clinics to be 2.7%.

Urine mercury levels for beauty lotion users ranged from 7.9 µg/L to 32.8 µg/L, (median 18.2 µg/L), whereas the levels among non-users ranged from 0.70 µg/L to 23.20 µg/L, (median 4.3 µg/L, upper 95% confidence limit 16.3 µg/L). The median urine mercury level among users was approximately four times higher than the median level among non-users (95% CI for difference in medians is 3.6–26.6). Of the four lotion users who gave urine samples, two had elevated levels of urine mercury (>20 µg/L), whereas only one of 19 non-users had an elevated level (prevalence ratio [PR] 9.5; 95% CI : 1.1–81.1). Two large studies have established a reference range for urine mercury with a 95% upper confidence limit of >20 µg/L.3,4

Of the five users, four (80%) reported symptoms consistent with mercury toxicity, whereas only four (20%) of 20 non-users reported such symptoms (PR = 4.95% CI : 1.5–10.7). The most frequently reported symptoms are listed in Table 1.

Other exposures to mercury were uncommon among the women interviewed.

The use of mercury-containing cosmetics for skin lightening and other purposes has been reported in south London among people of Afro-Caribbean heritage.5 Other past sources of exposure to calomel include Chinese patent medicine, used both in China and in the US.6 This study shows that use of mercury-containing lotion is also found along the US–Mexico border, and is likely to be even more prevalent in Mexico where the lotion was manufactured and sold. In response to
learning of the mercury-containing lotion, the Mexican Secretary of Health seized 35,000 containers of ‘Crema de Belleza’ in the State of Tamaulipas, Mexico. In addition, the Mexican Secretary of Health issued an ‘epidemiological alert’ to all northern border states of Mexico to increase surveillance for cases of acute or chronic mercury intoxication.¹

In the US, mercury compounds can only be used as preservatives in eye-area cosmetics at concentrations not exceeding 65 ppm of mercury.² Although the sale of skin lighteners that contain mercury is restricted by Food and Drug Administration regulations in the US, controlling the distribution of such products at flea markets, by small operators, and by mail from Mexico is difficult. Other countries with existing controls on the sale of mercury-containing cosmetics face similar problems.

People who are still using mercury-containing cosmetics are at risk of mercury toxicity. Because early clinical symptoms of mercury toxicity are non-specific, low-level mercury toxicity may be easily misdiagnosed, thus increasing people’s risk of continued mercury exposure and consequently of more serious manifestations of mercury toxicity.

In our study, although all five users had discontinued using the lotion at least 2 months before the urine specimens were collected, two still had mercury levels >20 µg/L.

The use of this lotion may be substantial in the population we studied. Interestingly, each lotion user reported knowing at least one additional user. In addition, we strongly suspect that its use is far more prevalent in Mexico.

The border state health departments are continuing to publicize the health risks of using any product containing calomel, with special efforts to reach communities along the US–Mexico border.

This investigation highlights the need for health care providers and the public to be aware of the health risks associated with the use of products that are not tested or approved for sale by major national regulatory agencies. Since standards for the production and regulation of cosmetics products vary worldwide, ingredients that are restricted in one country may be legitimately purchased across the border. We recommend that health care providers, in particular along the US–Mexico border, remain alert to the possibility of mercury poisoning when evaluating patients with health complaints. Exposure to a toxic agent such as mercury through cosmetic use is a completely preventable public health threat.

REFERENCES


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Table 1 Reported symptoms among users and non-users of mercury-containing beauty lotion, New Mexico, 1996