UNEP / CNR-IIA / WHO Workshop

Elements towards a Global Monitoring Plan for Mercury

13–14 February 2018
CNR – Montelibretti Research Area (Monterotondo, Italy)

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Workshop of the Global Environment Facility (GEF) funded project “Developing a Global Monitoring Plan for Exposure to and Environmental Concentration of Mercury” was held in Institute of Atmospheric Pollution Research (CNR-IIA), Italy. Three participants were dispatched to the Workshop from Japan.

February 13, 2018

1. Reports from “Human Biomonitoring as a tool to assess the exposure to Mercury” were as follows;
   ① Overview of the project
   ② Ethical and cultural consideration, ethical committee’ approval
   ③ Designing and planning of the survey: target population groups and sampling size
   ④ Selection of biological matrices and feasibility: applicability of different matrices
   ⑤ HBM survey implementation: contacting and recruiting women and organization of the field work
   ⑥ Analytical methods and capacity needs, QC/QA programmes
   ⑦ Fish contamination monitoring and interpretation of the results
   ⑧ Positive experience of implementing mercury HBM survey
Outcomes of the HBM project (main achievement at regional and global level)

2. Presentations in “Worldwide initiatives of mercury and mercury compound monitoring” were as follows;
   
a. Experiences in biota and human monitoring by David Evers /BRI
b. Presentation by Milena Horvat / Jožef Stefan Institute
c. Health effects and HBM of populations exposed to elemental mercury vapor and methylmercury by Mineshi Sakamoto / National Institute for Minamata Disease
d. Levels and trends of mercury in humans in the Arctic Monitoring and Assessment Programme(AMAP) 2015Human Health Assessment Report by Pál Weihe / The Faroese Hospital System

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Main Outcomes of the Working group discussion for human biomonitoring (HBM) were as follows;

Policy questions addressed:

• Identification of the vulnerable populations to mercury exposure.

  What are vulnerable populations? Hysiological vulnerability (pregnant women and fetuses) and highly exposed groups (fish consumption, contaminated sites, occupational; exposure, poor population/economically disadvantaged).

  Several examples were reported from Faroe Islands, AMAP (Arctic Monitoring and Assessment Programme), Mediterranean, Russian Siberia, and Ghana.
There is a difference in approaches to evaluate the exposure in general populations and the exposure in vulnerable groups.

In relation to fish consumption:

- The mercury in cord blood and hair samples will be sufficient for HBM of fish-consuming populations. Cord blood mercury mainly provides information about maternal exposure to methylmercury and also that of newborns.
- The mercury in urine is applicable to populations who were exposed to elemental mercury in hotspots, especially in artisanal scale gold mining (ASGM) and occupational exposure.

Compounds:

- Analyzing total mercury is required because analysis of methylmercury is much more difficult and expensive.

Frequency:

- HBM should be carried out more than once per five years in general populations.
- Seasonality: within the same country, the HBM survey should be carried out in the same season.

What type of results can be expected?

- Levels of internal exposure in general populations world-wide.
- The geographical and temporal trends.
- Identification of countries and populations which require urgent measures to reduce mercury exposure.
- New information on global exposure to mercury.

Comparability and needs for correlations.

- Quality control and quality assurance are necessary for comparability of the analytical data.
- Eligibility of HBM data should be appropriately designed; ethical considerations are also important!