PEDIATRIC ENVIRONMENTAL MEDICINE: WHENCE AND WHERE TO?

PEDIATRIA ŚRODOWISKOWA – MYŚLI I REFLEKSJE

Some thougths and reflexions at the 6th International Conference on Children's Health and Environment (INCHES), 14–16 November 2011, Łódź

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Children's Environment

The environment of children – here primarily in Central and Eastern Central Europe – is manifold and consists of parents and teachers; sibs and peers; homes, towns, and traffic; food and water; sports and music; electronic media; ionising radiation; ultraviolet radiation electromagnetic fields; allergens; bacteria and viruses; chemical residues; asbestos; lead and mercury, etc. Here, we will look at the "classical" environment, on anthropogenic physical and chemical conditions and substances that are, or possibly can be, noxious to children's (and adults') health.

Origins of Pediatric Environmental Medicine

In the sixties and seventies, several landmarks created a general public awareness in many countries of the world: Radioactive fallout from *nuclear weapon's tests*, Rachel Carson's *The Silent Spring* (1962), the explosion of the *Seveso* factory (1976), and the *Chernobyl* accident (1986). It was only some fourty years ago that medicine, medical science started to engage in this field (*environmental medicine*) on a larger scale. Until then, most people did not really doubt that science and technology would finally be capable to effectively handle the immissions, toxicants, hazards, destructions due to our expanding civilisation.

In Europe, in the late Seventies and Eighties, at the beginning "queer, esoteric" activists, later the general public and finally the medical community became aware of chemical pollutants in air, water, soil, and human milk, of ionising radiation and electromagnetic fields, of asbestos and of fine particles, They observed deleterious effects on children's health with increases of atopic diseases, of malignancies, of prenatal damage, and negative effects upon IQ and behaviour; and at the same time, of the global impacts of our expanding civilisation and inflationary consumption, most importantly of the consequences of the wasting of our energy resources: climate change and its manifold sequelae, loss of boreal and tropical forests, and ozone depletion.

Reactions and Initiatives

In 1991, the German Academy of Pediatrics established a Pediatric Environmental Commission, which still exists, together with its Pediatric Documentation and Information Center for Environmental Issues (DISA, now Kinderumwelt Ltd., non for profit). In the following years, international agencies, governments, and non governmental organisations (NGOs) and also the medical community and pediatricians became active in this field.

Among those, a series of „Ministerial Conferences on Environment and Health" (Frankfurt 1989, Helsinki 1994, London 1999, Budapest 2004, and Parma 2010) repeatedly placed children's health into the focus of activities. A World Health Organisation's (WHO's) Children's Environment and Health Action Plan for Europe (CEHAPE) was adopted in 2004 in Budapest, and member states in

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the WHO European Region made commitments to start activities and measures to protect children's health, including aspects of primary prevention, precautionary measures, equity and poverty reduction. Priority goals aimed at (1) water, (2) accidents and injury, (3) air quality, and (4) chemical and physical agents.

Different Regions, Different Contexts and Priorities

Depending on regional aspects, priorities differ very markedly according to the economic and cultural background of the respective countries. Globally, boreal and tropical deforestation, climate change, desertification, ozone depletion, radioactive and chemical waste are the foremost problems, largely accentuated by problems due to the growing population (poverty, hunger, migration, sanitation and infectious diseases).

In developing countries, water and sanitation, vector borne diseases, indoor and outdoor air pollution, pesticides and chemical risks, injuries and child labour are the foremost pathogens. In Europe's less developed regions, outdoor and indoor air pollution, inadequate water and sanitation, lead exposure, and injuries are the environmental factors that contribute most to children's burden of disease.

Improvements and Remaining Problems

Due to many factors (among them pressure of public opinion, activities of non-governmental organisations, also due to some pediatricians), a number of conditions have changed (or have been changed) to the better. Human milk and its decreasing load of organochloride contamination in Germany may serve to illustrate this development. Within the last 25 years DDT and PCB have decreased more than sixfold, lindane more than fifteenfold, and hexachlorbenzene nearly be the factor of forty.

Due to important changes in sociocultural and economic conditions in our European countries, the ***social environment*** has become ever more important, more threatening and destructive to the health of our children: excessive media consumption, illegal and legal drugs, migration background and poverty and poor education, obesity and physical immobility, and violence.

This does not signify that the ***"classical" spectrum*** is to be disregarded. Ionising radiation in the surroundings of nuclear reprocessing plants, ultraviolet radiation due to ozone depletion, and fine particles are physical noxious conditions; and flame retardants (polybromated diphenylethers), softeners (phthalates), fragrances (musk substances) perfluorated tensides, bisphenol, all of them worldwidely distributed and persistent over many decades, are immitted into our world in quantities of hundreds of thousands or millions of tons per year. This matters and must give us pause.

A long distance look into the future

Pediatricians care for patients that may live for another hundred years, thus they must look into the future and worry. But are we short sighted if we ask only for child or grand child viability? Mankind has inhabited this world for hundreds of thousands years, and may continue to exist for many other milleniums, into times when signs telling "keep off, radiation" or "do not touch, toxic" will have waned away, and when nobody will understand the languages in which such signs are written. Environmental medicine – not only caring for children but also treating our environment – will remain a challenge and an important task for the medical community, and especially for pediatricians.

Let us not forget that this world existed long before mankind appeared on earth, and it will be still there when our world probably will no more be inhabited by Homo Sapiens. Human environment exists only as long as mankind exists. There is this complaint of one planet: Oh, I am so sick, I have a kind of influenza, I am infected by homo sapiens. And the consolation of a fellow planet: Don't worry, this will pass away.

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