

CHERNOBYL A GLOBAL ISSUE. LESSON LEARNED AND FUTURE ACTION  
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For large scale nuclear incidence and accident, 20 years after the events is not end of the study as long as health concerned. However, this conference will provide future vision and approach for international cooperation. Which got huge amount of knowledge and positive and negative experience?

Concerning the health aspect of human tragedies are beyond the health impact of incidence but more engineering, information and communication, organization, environmental condition, economic conditions and serious lack of knowledge of previous incidence due to the uranium fusion such as Hiroshima..

Many studies including the health aspects has been carryout and WHO and the Governments and civil societies are get together at the anniversary of 10 years and 15 years.

In fiat instance, it was first Land explosion against Hiroshima which is air explosion.

Despite scale of explosion was far more than Hiroshima (some estimate speculate 20time more) but number of human death are relatively small but not yet confirm too early.

Past experience revealed many failure but we can admitted that this is due to the complete lack of precaution and prevention. For example massive open-air evacuation during the nuclear fallout with out taking consideration of climatic condition. Nobody at that time nuclear fallout spread whole Europe and some middle east in few days. The situation of no physical communication and bureaucracy. the liquidators and local resurge team have not provided appropriate protection.. From point of health, the local and international scientist and engineer are looking mainly Long-Half Life nucleotides such as Cesium and Strontium but not short active one such as Iodine. It is only later recalling the Uranium fusion emitting Iodine which rapidly absorbed to thyroid. When I involved as WHO Director general, I order to Japan to provide Ultrasonic echography to Minsk but when I visited the case was not yet open but I find during hospital visit one charming young girl whose thyroid swelling was most surly thyroid tumor.

Relatively early surveillance of Thyroid tumor and skilful surgical intervention saved almost patient from death. Recent report mentioned among the about 4000 case of thyroid cancer, mainly children. At least only 9 cases died. The number of thyroid tumor are decreasing now, like Hiroshima case and now possible increase of Leukemia among the Liquidator from Russia debated in 15 years anniversary meeting in Kiev and Recently report from Belarus, Russian Federation and Ukraine suggest increase of Leukemia and Premenstrual Breast cancer but within experience Hiroshima, Leukemia was developed in long period with combined non radiation factor. Therefore, more long period of organized study will be necessary. Premenopausal Breast cancer should be looked both nutritional, physical and hormonal factor. In this respects surveillance of Chronic Thyroiditis and its relation may be interesting.

After 20years,there are no comprehensive registry for Chernobyl accident which are more difficult than Hiroshima because the population affected are displaced and moving/immigration not only Europe and America but also other county of the world.. With this 20years commemoration, we should again reaffirmed that Chernobyl issue are global issue and not only Health scientist, Engineer and Scientist, Politicians, Economists and Journalists but all of the people in the world should be involved.

Experience of 20 years will significantly contribute recent global discussion about "Energy Choice and Health". The French National Academy of Medicine alarmed at threat on human health, at the planetary scale, caused by the increased in atmospheric green house gases, most of developing countries have no alternative solution but may be future efforts for use of alternative energy such as nuclear energy which appear lesser impact on health by kWh produced compared to power generated by fissile fuels. Realization for this called "Health for All ~ Energy for All", continuous studies and collected data and experience of Chernobyl Accident will certainly contribute to build "Nuclear Safety for health".

Many priorities area could be suggested and recommendation of previous conference still values but not yet pursued such as from health point of view:

- Development of new technologies such as molecular biological dosimetry and statistical and stochastic methods such as meta analysis and algorithm.
- Dose effect relation assessment for mortality and morbidity of long term low dose irradiated population. Linear Non Threshold dose- effect or application of radiation hormesis (like tobacco and wine!)
- Monitoring of plant workers, liquidators and surrounding population, even low dose exposure, as precautionary measure. 20 years is too short for assessment and evaluation of future morbidity and mortality
- Evacuation in open air after accident to be avoided. Need regular weather monitoring
- Water pollution/contamination monitoring
- Continuous education, information and involvement of population
- Increased transparency of nuclear operators and responsible state nuclear safety organization, avoidance of inappropriate Iodine distribution
- Special education for health profession particularly local medical practitioners, pharmacists and veterinarians for radiation related diseases and to exercise regular check-up of population as a precaution measure
- Continuous registration and updating of exposed population
- Follow-up possible radiation related diseases such as thyroid cancer and non-cancer thyroid diseases, leukemia, bone diseases, CVD, cataract, mental health and psychosocial effects and associated factors such as lifestyle, environment, socioeconomic conditions
- Special attention to possible increase of breast cancer as delayed consequence of irradiation and/or delayed side effect of thyroid cancer treatment (especially TSH suppressor therapy) and non cancer thyroid diseases (such as Hashimoto disease) and dysfunction.
- Life style education to exposed population re nutrition, smoking, alcohol and physical exercise and building appropriate sports and exercise facilities in low dose contaminated area where return of population is possible.