RafflesMedicalGroup

17 March 2011

To whom it may concern,

NUCLEAR RADIATION EMERGENCY

INTRODUCTION

1. On March 11, 2011, The Japanese Islands were struck by an earthquake and tsunami centred in the Miyagi Prefecture to the north. The Fukushima prefecture sustained substantial damage as well and on March 12 was declared an "atomic power emergency" at the Fukushima I Nuclear Power Plant.

2. Japan's Nuclear and Industrial Safety Agency reported an initial increase in levels of radioactivity around the plant earlier on 12th March. However, but these levels have been observed to lessen in recent hours.

3. Based on information available at this point, those in Tokyo/Narita or not near any other affected nuclear reactors are not at risk.

HEALTH RECOMMENDATIONS

4. Travellers who have returned from Japan may seek medical consultation for possible radiation exposure under the following circumstances:

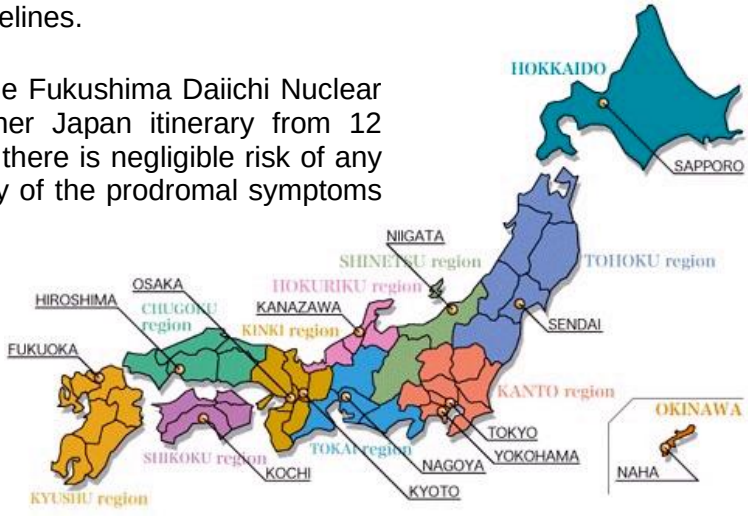
    a The traveller was within 20km of the Fukushima Daiichi Nuclear Power Plant site anytime during his/her Japan itinerary from 12 March 2011

    AND

    b The traveller is experiencing any symptoms of unexplained headache, nausea, vomiting, fever &/or diarrhoea since the travel

5. Our doctors will review the traveller, perform recommended blood tests and follow up with the traveller according to MOH guidelines.

6. Travellers who were outside 20km of the Fukushima Daiichi Nuclear Power Plant site anytime during his/her Japan itinerary from 12 March 2011 are expected to be well as there is negligible risk of any contamination in the absence of the any of the prodromal symptoms mentioned above.



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FREQUENTLY ASKED QUESTIONS

What is ionizing radiation?

- When certain materials disintegrate, either naturally or in man made situations, they release a type of energy called Ionizing radiation (IR). This energy can travel as either electromagnetic waves (e.g. X-rays) or as microscopic particles.

- The materials that emit radiation are called radioactive materials.

Are people normally exposed to ionizing radiation?

- Human beings are continuously exposed to natural radiation on a daily basis. The radiation comes from space (cosmic rays) as well as natural radioactive materials found in the soil, water and air.

- People can also be exposed to radiation from human-made sources. Today, the most common man made source of ionizing radiation are certain medical devices such as X-ray machines.

- In some parts of the world, levels of exposure to natural radiation differ due to differences in the local geology. People in some areas can be exposed to more than 200 times the global average.

How are people exposed to ionizing radiation?

- Ionizing radiation may result from sources outside or inside the body (i.e. external irradiation or internal contamination).

- Internal contamination may result from breathing in or swallowing radioactive material or through contamination of wounds.

- External contamination -occurs when a person is exposed to external sources such as X-rays or when radioactive material (e.g. dust, liquid, aerosols) becomes attached to skin or clothes. This type of contamination can often be washed off the physical body.

What type of radiation exposure could occur in a nuclear power plant accident?

- If a nuclear power plant does not function properly, radioactivity may be released into the surrounding area by a mixture of products generated inside the reactor.

- Members of the public may be exposed directly to such radionuclides in the suspended air or if food and drink are contaminated by such materials.

What are the acute health effects of radiation exposure?

- If the dose of radiation exceeds a certain threshold level, then it can produce acute effects, such as skin redness, hair loss, or radiation burns

- In a nuclear power plant accident, **the general population is not likely to be exposed to doses high enough** to cause such effects.

What long-term effects can be expected from radiation exposure?

- Exposure to high levels of radiation can increase the risk of cancer. Among the Japanese atomic bomb survivors, the risk of leukaemia increased a few years after radiation exposure, whereas the risks of other cancers increased more than 10 years after the exposure.

- Radioactive iodine can be released during nuclear emergencies. If breathed in or swallowed, it will concentrate in the thyroid gland and increase the risk of thyroid cancer. Among persons exposed to radioactive iodine, the risk of thyroid cancer can be lowered by taking potassium iodide pills, which helps prevent the uptake of the radioactive iodine.

- The risk of thyroid cancer following radiation exposure is higher in children and young adults.

Which public health actions are most important to take?

- Health effects can only occur if someone is exposed to high levels of radiation, thus the main protective action someone can take is to prevent exposure. Those closest to the radiation are at greatest risk of exposure and the greater the distance away, the lower the risk. This is why when a nuclear accident occurs, the recommended public health actions involve evacuation and sheltering of those near the site.

- These necessary actions depend on the estimated exposure (i.e., the amount of radioactivity released in the air and the weather conditions such as wind and rain. The actions include steps such as evacuation of people within a certain distance of the plant, providing shelter to reduce exposure and providing iodine pills for people to take to reduce the risk of thyroid cancer).

- If warranted, steps such as restricting the consumption of vegetables and dairy products produced in the vicinity of the power plant can also reduce exposure.

- Only health authorities who have conducted a careful analysis of the emergency situation are in a position to recommend which of these public health measures should be taken.

How can I protect myself?

- Keep you and your family informed by obtaining accurate and authoritative information (for example, information from authorities delivered by radio, TV or the Internet) and following your government's instructions.

What are potassium iodide pills?

- In the setting of a nuclear power plant accident, potassium iodide pills are given to protect the thyroid gland and prevent the uptake of radioactive iodine. When given before or shortly after exposure, this step can reduce the risk of cancer in the long term.

- Potassium iodide pills are not "radiation antidotes". They do not protect against external radiation, or against any other radioactive substances besides radioactive iodine. They may also cause medical complications for some individuals such as persons with poorly functioning kidney. Therefore, one should only begin taking potassium iodide when there is a clear public health and medical recommendation for one to take this precautionary step.

Can pregnant women take potassium iodide pills?

- Pregnant women should take potassium iodide pills only when instructed by the medical doctor. The thyroid of a pregnant woman accumulates radioactive iodine at a higher rate than other adults. Potassium iodide pills taken by the mother would also block the thyroid of the foetus.

What is the current risk of radiation-related health problems in Japan to those near the reactor at the time, and those in other parts of Japan?

- The actions proposed by the Government of Japan are in line with the existing recommendations based on public health expertise. The government is asking people living within 20 km of the Fukushima Daiichi nuclear power plant to evacuate and those between 20km and 30km away from the plant are asked to stay indoors in unventilated rooms. People living farther away are at lower risk than those who live nearby.

- This assessment can change if there are further incidents at these plants Radiation-related health consequences will depend on exposure. Exposure in turn is dependent on the amount of radiation released from the reactor, weather conditions such as wind and rain at the time of the explosion, the distance someone is from the plant, and the amount of time someone spent in irradiated areas.