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Letter to Editor

No Mercury Hospitals: Can We Function Without Mercury Laden Equipments?

Dr (Major) Shishir Basarkar

Chief Operating Officer, Marble City CARE Hospital, Jabalpur (MP), India

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Sir,

Mercury (Hg), Mercury is the only common metal liquid at room temperatures and is silvery-white in colour. It is sometimes called quicksilver. . It alloys easily with many metals, such as gold, silver, and tin and these alloys are called amalgams which are extensively used in Dental practices. It is toxic and Hazardous because it is very volatile element and because of this the dangerous levels are attained in air rapidly. In every healthcare setting the main source of mercury is sphygmomanometer, thermometer and dental amalgams. As the temperature increases the concentration of mercury vapour increases linearly therefore this metal be handled very carefully by all concerns healthcare givers irrespective of size of the organization. Methyl-mercury is a dangerous compound that is widely found as a pollutant in water bodies and streams. [1]

This liquid metal becomes fatal in case inhaled however less harm when absorbed through the skin barriers. Around 80% of the inhaled mercury vapor is absorbed in the blood through the pulmonary circulation. Poisoning caused by mercury can take any of two forms either acute or chronic. It is dangerous to very vital system of body like immune system, nervous system, digestive system, respiratory system and kidneys. Adverse health effects from long term mercury exposure any of or combination of these tremors, impaired vision and hearing, paralysis, insomnia, emotional instability. Developmental deficits during fetal development. Attention deficit and developmental delays have been observed during childhood. Studies have shown the chronic effects such as tremors, impaired cognitive skills, and sleep disturbance in workers with chronic exposure to mercury vapor even at low concentrations in the range of 0.7 to 42 µg/cu mt. [2]

The main cause of mercury related pollution arises from the improper hospital waste management in the form of incineration as this process releases mercury in the atmosphere. Though the correct data regarding atmospheric concentration is not available in India however in USA the environmental protection agency has reported that incineration are responsible for about 10% of all mercury released in the environment. According to WHO another source of environmental pollution with mercury vapours is the amalgam which is extensively used in dental fillings. Most of the mercury containing healthcare equipments are made of glass and their breakage in inevitable leading to mercury spills resulting in to health hazards to patients and care givers. Because of it's liquid nature the spilled metal cracks in to the beads which settle down in the cracks in the floorings or may cling to the porous surface containing items like carpets, wooden panels, fabrics thus becoming

extremely difficult to remove these beads. The foot wear may be another source to transfer this metal in the healthcare organizations. An average sized hospital in India releases around 3 kg of elemental mercury in the environment in a year. With very conservative estimates, a city like Delhi would be releasing around 51 kg of mercury each year through dental practices alone. [3]

At all levels the efforts are being taken to reduce the use of mercury filled healthcare equipment however the belief among the medical staff that the reading through non mercury equipments (aneroid sphygmomanometer) will be inaccurate thus unacceptable though such claims have no base.

The World Health Organization issued a policy paper in 2005 calling for short-, medium-, and long-term measures to substitute mercury-based medical devices with safer alternatives. The World Medical Association passed a resolution in 2008 calling for the substitution of mercury-based medical devices with safer alternatives.

In Argentina, more than 70 hospitals have replaced or are on the path to replacing mercury free thermometers and blood pressure devices. In Sao Paulo, Brazil, more than 100 hospitals have eliminated mercury-based thermometers and sphygmomanometers. There are many hospitals in India which are mercury free.

The ministry of Health and family welfare has drafted stressing up on mercury free equipments thus to curb the mercury pollution. It is interesting to note that many of the hospitals accepted this draft and working on looking for non mercury equipments thus phasing out the existing mercury laden equipments.

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