

P15. Congenital anomalies that are dependent on environmental pollution

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Congenital anomalies are a major cause of infant mortality. Congenital anomalies that are important contributors to childhood and adult morbidity can be of genetic or environmental origin. There are important factors that directly or indirectly affect health in the environment. Development in the early phase of embryonic development is largely determined by fetal genes, but development is affected by environmental or epigenetic factors in later stages. If these effects are harmful, undesirable consequences may occur during the fetal period and later development periods.

Environmental pollution factors have been associated with low birth weight, intrauterine growth retardation, preterm delivery, spontaneous abortion and fetal mortality. Exposure to environmental pollution is associated with birth defects such as neural tube defects, cleft palate and lip, cardiovascular system defects, central nervous system, respiratory system and urinary system defects. In infants exposed to high levels of O₃ and CO, the rate of infants with cleft palate and lip and heart defect was 3 times higher in the studies. High levels of CO were found to increase the incidence of ventricular septal defect. Similarly, it was observed that the frequency of ophthalmopathy and pulmonary artery and pulmonary valve defects in the aorta and aortic valve were increased. Maternal exposure to low levels of nitrogen dioxide has been reported to cause neuromuscular coordination defects in neonatal rats. In another study, it was found that the risk of having anencephaly was higher in the children of women who were working in environments with high concentrations of solvents and pesticides.

Protection in congenital anomalies is a multifaceted approach. In order to prevent congenital anomalies; one must reduce exposure to potential teratogens before pregnancy is recognized. Despite the various protective mechanisms in the intrauterine environment, some environmental agents may reach developmental anomalies by reaching the embryo through maternal contact. Informing the public about the genetic and environmental factors that affect the fetus is an important step in this approach.

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