Effects of Air Pollution on Premature Babies and Pregnant Females in Kenya

Jill Omire*

Department of Preventative Medicine, Pwani University, Mombasa, Kenya

Description

Air pollution is a pervasive environmental issue that affects millions of people worldwide, including vulnerable populations such as pregnant women and infants. In Kenya, as in many other developing countries, air pollution poses significant health risks to pregnant women and can contribute to adverse birth outcomes such as low birth weight. This essay explores the impacts of air pollution on pregnant women and the link to low birth weight in Kenya, as well as potential strategies for mitigating these risks. Air pollution in Kenya stems from various sources, including vehicular emissions, industrial activities, biomass burning, and household cooking and heating using solid fuels. In urban areas such as Nairobi and Mombasa, traffic congestion and the combustion of fossil fuels by vehicles are major contributors to air pollution [1].

Additionally, industrial facilities, informal settlements, and open burning of waste exacerbate air quality issues in urban centers. Exposure to air pollution during pregnancy can have serious consequences for both maternal and fetal health. Pregnant women are particularly vulnerable to the adverse effects of air pollution due to physiological changes that occur during pregnancy, including increased blood volume, changes in lung function, and alterations in immune responses. Furthermore, exposure to air pollution during pregnancy has been linked to adverse birth outcomes, including preterm birth, intrauterine growth restriction, and low birth weight. Low birth weight, defined as a birth weight of less than 2,500 grams, is associated with an increased risk of infant mortality, developmental delays, and chronic health conditions later in life. Studies have found a correlation between maternal exposure to air pollution and an elevated risk of delivering a low birth weight baby [2].

Several mechanisms may underlie the association between air pollution and low birth weight. Inhalation of fine Particulate Matter (PM2.5) and other air pollutants can induce systemic inflammation and oxidative stress in pregnant women, potentially compromising placental function and fetal development. Moreover, air pollution can impair maternal respiratory function, reducing oxygen delivery to the fetus and restricting intrauterine growth. In Kenya, where air pollution levels exceed World Health Organization (WHO) guidelines in many urban areas, pregnant women are at heightened risk of adverse health outcomes. Poor air quality is a public health crisis that disproportionately affects marginalized communities, including low-income households and informal settlements, where access to clean air and healthcare services may be limited. Pregnant women living in these areas face compounded risks due to environmental and socioeconomic factors [3].

Addressing air pollution and its impacts on maternal and child health requires a multifaceted approach that addresses pollution sources, improves air quality monitoring and surveillance, and enhances healthcare infrastructure and access to prenatal care. Policy interventions aimed at reducing air pollution and protecting vulnerable populations are critical for safeguarding maternal and child health in Kenya. One strategy for mitigating air pollution is to reduce emissions from transportation, industry, and energy generation through regulatory measures, technological innovations, and investment in sustainable infrastructure. Promoting public transportation, transitioning to cleaner fuels and vehicles, and implementing emission standards for industrial facilities can help reduce ambient air pollution levels and protect pregnant women and infants from harmful exposures [4,5].

Acknowledgement

Conflict of Interest

None.

References

1. Wainburg, Mark A. "The impact of the M184V substitution on drug resistance and viral fitness." *Expert Rev Anti Infect Ther* 2 (2004): 147-151.

2. Hong, Wang Sung, JueiLow and Jui Yun Yu. "Clinical study on primary carcinoma of the liver in Taiwan." *Am J Dig Dis* 12 (1967): 1036-1049.

3. Wan Long, Chuang, Liu Chun Jen I.Shyan Sheen and Horng Yuan Wang, et al. "Efficacy of ledipasvir and sofos buvir treatment of HCV infection in patients coinfected with HBV." *Gastroenterology* 4 (2018): 989-997.

4. Joseph, Sung, Liaw, YunFan, Wan Cheng Chow and Geoffrey Farrell, et al. "Lamivudine for patients with chronic hepatitis B and advanced liver disease." *N Engl J Med* 15 (2004): 1521-1531.

5. Shaikh, Atif Iqbal Ahmed and Appasamy Thirumal Prabhakar. "Typhoid fever and its nervous system involvement." In Innate immunity in health and disease, London: Intech Open (2021): 1-5.

*****Address for Correspondence**: *Jill Omire, Department of Preventative Medicine, Pwani University, Mombasa, Kenya, E-mail: jillomire@kmfri.go.ke*