

عنوان مقاله:

Associations between Prenatal Exposure to Air Pollutants and Cord-Blood Thyroid Hormones Levels: A Cross-Sectional Study in Isfahan

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خلاصه مقاله:

Background: Air pollution as a major health concern in the world can adversely affect pregnant women and their newborns' thyroid function. We evaluated the association between prenatal exposure to air pollutants and cord-blood thyroid hormone levels. Method: This cross-sectional study was conducted as a sub-study of the PERSIAN birth cohort on mothers and their newborns from October ۲۰۱۹ to September ۲۰۲۱. All participants, related data, and cord blood samples were gathered from the Isfahan. The air quality index (AQI), extracted from its official website, and was used to assess overall air quality during pregnancy. The association between mean levels of AQI in the three trimesters with cord blood thyroid hormone levels was evaluated. Results: In ۱۹۵ mothers with a mean age of ۲۹.۷۹(۵.۴۶), the mean of TSH and free T_۴ was ۶.۹۶ IU/L and ۱ng/dl, respectively. The total days with moderate AQI (۵۱-۱۰۰) were higher than other AQI categories over the three trimesters. This study found no significant association between the mean cord-blood TSH and AQI > ۱۰۰, (P > ۰.۰۵). The mean cord-blood FT_۴ had a negative association with total unhealthy days for sensitive groups in the first trimester and total very unhealthy days in the third trimester. The mean cord-blood FT_۴ was positively associated with unhealthy days in the second trimester. Conclusion: The cord-blood FT_۴ levels were associated with prenatal exposure to AQI higher than ۱۰۰. These results highlight the need for air pollution management to minimize neonatal thyroid hormone alteration and its critical sequelae.

کلمات کلیدی:

Air pollution, air quality, maternal exposure, thyroid stimulating hormone

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