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Investigation the parental and postnatal exposure to electromagnetic fields in childhood acute lymphoblastic leukemia and considering the role of urinary alpha amylase as an indicator of this exposure - A case control study

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Childhood acute lymphoblastic leukemia (ALL) is one of the most common hematologic malignancies which accounts for one fourth of all childhood cancer cases. Exposure to environmental factors around the time of conception or pregnancy can increase the risk of ALL in the offspring. This study aimed to evaluate the influence of prenatal and postnatal exposure to high voltage power lines on the incidence of childhood ALL. It also examines the role of various factors such as environmental factors and alpha-amylase as a marker in the development of leukemia. This cross-sectional case control study was carried out on 22 cases and 100 controls who born and lived in low socioeconomic families in Tehran and were hospitalized for therapeutic purposes in different hospitals. With regard to the underlying risk factors; familial history and parental factors

were detected as risk factors of ALL but in this age, socioeconomic and zonal matched case control study, prenatal and childhood exposure to high voltage power lines was considered as the most important environmental risk factor. As the population study was from low socioeconomic state, use of mobiles, computers and microwaves was negligible. Moreover, prenatal and postnatal exposure to all indoor electrically charged objects were not detected as significant environmental factors in the present study. This work defends the risk of environmental especially continuous pre and postnatal exposure to high voltage power lines and living in pollutant regions through the parents or children as well as the previously described risk factors of ALL.

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