

Original Paper

Risk factors in childhood lymphoblastic leukemia in Shiraz-Iran (2009): an epidemiological study

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Abstract

Background and Objective: The etiology of childhood leukemia as the most common childhood malignancy remains largely unknown. This study was done to assess the risk factors in childhood lymphoblastic leukemia in Shiraz-Iran.

Materials and Methods: This case-control study was done on 141 children younger than 18 years suffering from acute lymphoblastic leukemia (ALL) who resided at Fars Province of Iran during 2009. Patients were individually matched with 141 controls in respect to age, sex and residential area. Variables included: maternal age, parental education, father occupation, child birth weight and birth order, number of siblings, history of pet ownership including cat or dog, history of child day care attendance, history of leukemia in relatives, and history of mother diagnostic radiography during pregnancy. In order to evaluate the relationships between each variable and the risk of leukemia, odds ratio (OR) and 95% confidence interval (CI) were estimated using conditional logistic regression. Data were analyzed using SPSS-16 and Chi-Square test.

Results: The agricultural occupation fathers in case and control were 17% and 5.7%, respectively ($P<0.01$). The association between risk of childhood lymphoblastic leukemia with birth order ≥ 3 ($OR=5.939$, 95% CI: 2.646-13.331, $P<0.01$), pet ownership (dog or cat) ($OR=2.582$, 95% CI: 1.265-5.269, $P<0.009$) and history of leukemia in first and second degree relatives ($OR=3.5$, 95% CI: 1.252-10.633, $P<0.027$) was significant. No relationship was found between birth weight, day care attendance, history of miscarriage, number of siblings and history of mother diagnostic radiology tests with risk of acute lymphoblastic leukemia.

Conclusion: This study showed that father occupation, birth order, pet and history of leukemia in relation are risk factors of childhood acute lymphoblastic leukemia.

Keywords: Acute lymphoblastic leukemia, Father occupation, Birth order, Pet

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