

Hematological Malignancies in Children and Parental Occupational Exposure

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Abstract : Background: In recent decades, the incidence of children's hematological malignancies has been increasing worldwide including Tunisia. Their severity is reflected in the importance of the medical, social and economic impact. This increase remains fully unexplained, and the involvement of genetic, environmental and occupational factors is strongly suspected. Materials and Methods: Our study is a cross-sectional survey of the type case-control conducted in the University Hospital of Farhat Hached of Sousse during the period ranging between 1 July 2011 and 30 June 2012, and which included children with acute leukemia compared to children unharmed by neoplastic disease. Cases and controls were matched by age and gender. Our objective was to: - Describe the socio-occupational characteristics of the parents of children with acute leukemia. - Identify potential occupational factors implicated in the genesis of acute leukemia. Result: The number of acute leukemia cases in the Hematology Service and day hospital of the University Hospital of Farhat Hached during the study period was 66 cases divided into 40 boys and 26 girls with a sex ratio of 1.53. Our cases and controls were matched by age and gender. The risk of incidence of leukemia in children from smoking fathers was higher ($p = 0.02$, OR = 2.24, IC = [1.11 - 4.52]). The risk of incidence of leukemia in children from alcoholic fathers was higher with $p = 0.009$, OR = 3.9; CI = [1.33 - 11.39]. After adjusting different variables, the difference persisted significantly with $p = 0.03$ and ORa = 3.5; ICa = [1.09 - 11.6]. 25.7 % of cases had a family history of blood disease and neoplasia, whereas no control presented that. The difference was statistically significant ($p = 0.006$), OR = 1.46, IC = [1.38 - 1.56]. The parental occupational exposures associated to the occurrence of acute leukemia in children were: - Pesticides with a statistically significant difference ($p = 0.03$), OR = 2.94, IC = [1.06 - 8.13]. This difference persisted after adjustment with different variables $p = 0.01$, ORa 3.75; ICa = [1.27 - 11.03]. - Cement without a statistically non-significant difference ($p = 0.2$). This difference has become significant after adjustment with the different variables $p = 0.03$; ORa = 2.67; ICa = [1.06 - 6.7]. Conclusion: Parental exposure to occupational risk factors may play a role in the pathogenesis of acute leukemia in children.

Keywords : hematological malignancies, children, parents, occupational exposure

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