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Factors associated with pediatric acute leukemia

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Objective: This study was performed in order to determine the frequency of the sociodemographic, genetic factors, environmental and exhibitions pre and perinatal with pediatric acute leukemia.

Materials and methods: A study of cross-sectional, retrospective, quantitative, descriptive type in children younger than 15 years with leukemia lymphoid or myeloid, acute, in Medellín, and during the years 2008-2011, metropolitan area reported in the databases of the SIVIGILA and IPS, with information from the medical records and surveys to relatives of patients. A descriptive analysis of the data was performed.

Results: We studied 80 patients, median age of 8.5 years; higher proportion of women, 53.8%; the Diagnostics with 77.5% acute lymphoid leukemia, miscarriages mother 22.8%, families with a history of cancer 75.0%, exposure to smoke cigarette in the father 35.0%, exposure of the child to spraying with pesticides 41.3%, the exposure of the child and the mother to the proximity of major highways 57.5%, and history of varicella in children 22.5%. **Conclusions:** The highest proportion of factors was observed in the patient history and environmental factors which leads us to study in greater depth, the associations among these factors and guide health actions in management levels of the sector.

Key words: Acute leukemia, Pediatric, factors, environmental, genetic, perinatal. Source DeCS and BIREME

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Espectrophotometric characterization and cytotoxicity of new phthalocyanines derivatives of for treatment of colorectal carcinoma

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Colorectal carcinoma is the second leading cause of cancer deaths in the developed world and oxidative stress is a key factor. Photodynamic therapy is being explored as a novel treatment in which photosensitive substances, such as phthalocyanine derivatives are activated by visible light. We have synthesized new phthalocyanine derivatives called PZ.

Purpose: To characterize PZs espectrophotometrically to stablish the excitation wavelengths appropriate to activate them and induce death in tumor cells. To evaluate PZ citotoxicity at different doses in colorectal carcinoma HT29 cell line.

Methods: Two phthalocyanine derivatives (PZ1 and PZ2, that differ in the presence of saccharide lateral chains) were synthesized and characterized using Shimadzu spectrophotometer UV-1800 and spectrofluorometer RF-5301PC. Doses from 4.2 to 420 g/L were added to HT29 cells (ATCC) for 24 hours.

Result: Three absorption peaks were observed in the spectra of PZ1 and PZ2: 340nm, 658nm and 962nm. Excitation at 265nm results in emission in the visible spectrum range. Treatment with PZ1 yields a dose-dependent survival curve ranging from 73% (4,2g/L) to 37% (420 g/L). However, treatment with PZ2 results in a dose-independent 17% cell survival.

Conclusion: PZ has toxic effects on cancer cells. Our results suggest that the presence of the lateral chains induce higher mortality. We hypothesize that this effect might be due to a facilitated access to the cell by contact with membranes. Our next aim is to combine PZ treatment with light activation (UV, visible or infrared) while characterizing its subcellular localization and putative sites of therapeutic action.

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