

Focus on IFA's work

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Leukemia and benzene exposure

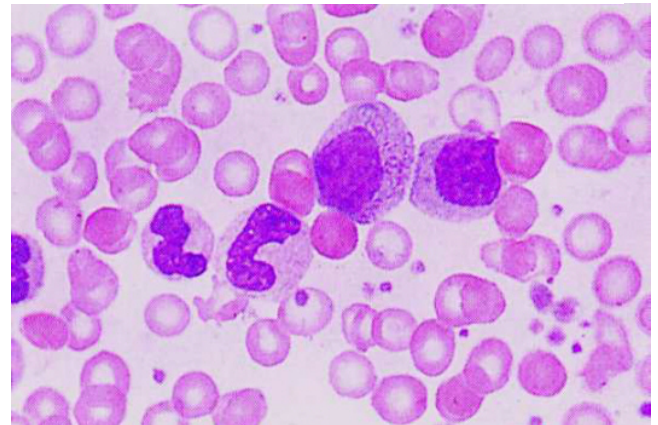
Problem

A large number of epidemiological studies about the leukemogenic effect of benzene exist. However, their conclusions are unclear regarding the type of leukemia. An increased risk of acute myeloid leukemia (AML) has been suspected. Owing to a lack of exposure data, the majority of the existing epidemiological studies contain only approximate estimations, if any, of a dose-response relationship.

A need therefore existed for an overview of benzene exposure at the workplace and in the non-occupational sphere, and of the detected risks for various types of leukemia.

Activities

In order to provide an up-to-date overview of the study results obtained to date in this area, the international literature until 2000 was evaluated at the IFA. The epidemiological studies on leukemia conducted in sectors involving benzene exposure were summarized by sector and type of leukemia and presented in diagrams. Information on benzene exposure was also collected from international publications and edited with reference to specific sectors and non-occupational areas. The possible relationships between benzene and types of leukemia were described.



Leukemia: chronic myeloid leukemia.

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Results and Application

The risk of leukemia resulting from benzene exposure appears to be somewhat increased throughout the world in the rubber and chemical industry and among filling station employees and car mechanics. The acute forms of leukemia (ALL, AML) appear to occur more frequently in the vocations subject in the past to high exposure, such as painters and shoemakers. Owing to the low number of studies in which the type of leukemia was differentiated and to the high scatter of the detected risks, no clear evidence regarding the type of leukemia can be drawn. A clear statement concerning the risk for a particular type of leukemia associated with benzene cannot be made on the basis of existing knowledge.

The review conducted by the IFA provides a comprehensive collection of data on sector-specific benzene exposure and epidemiological study results until 2000, and thus constitutes a basis for further studies in this area.

Area of Application

Plants with benzene exposure; regulatory committees

Additional Information

- BIA-Report "Leukämie und Benzolexposition: Auswertung und Zusammenfassung epidemiologischer Studien". Hrsg.: Hauptverband der gewerblichen Berufsgenossenschaften (HVBG), Sankt Augustin 2002
www.dguv.de/webcode/d6535

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Literature Requests

IFA, Central Division