



Project Summary

The Role of Spontaneous Abortion Studies in Environmental Research

Jennie Kline, Zena Stein, Maureen Hatch, and Barbara Strobino

This project assessed the utility of studies of spontaneous abortion in detecting hazards to reproduction which arise in the work place or the environment. Emphasis is given to methodologic issues which are special to the use of spontaneous abortion as an endpoint, and to the study of relatively rare exposures such as those encountered either in the workplace or in particular geographic locations.

This Project Summary was developed by EPA's Health Effects Research Laboratory, Research Triangle Park, NC, to announce key findings of the research project that is fully documented in a separate report of the same title (see Project Report ordering information at back).

Introduction

Objectives

The objective was to review in a comprehensive manner the present role and potential use of spontaneous abortion studies in environmental research, in order to describe the strengths and limitations of such studies

Background Information

Recently considerable interest has been focused on spontaneous abortion as an outcome variable in research on the reproductive effects of environmental agents. This interest has arisen in part because studies of spontaneous abortion appear to have advantages in statistical power, timing, practicality and sensitivity over studies of live births for the detection of hazardous agents.

Approach

The approach was threefold. (1) to consider the implications of the epidemiology of spontaneous abortion for studies of environmental and occupational exposures; (2) to review studies which have examined the relationship of an environmental agent to spontaneous abortion; and (3) to outline and evaluate the research strategies that have been used or that could be used in epidemiologic studies of relatively rare exposures.

Conclusions

Studies of spontaneous abortion have the potential to detect exposures which operate in a variety of ways, especially when the products of conception are available for chromosomal analysis. However, cytogenetic studies of the abortus require a cross-sectional design which may not be practical for investigations of relatively rare environmental exposures. Without this level of specificity in describing the outcome, studies of spontaneous abortion will be most useful in detecting maternal post-conception exposures which increase the risk of chromosomally normal abortions, since abortions of this type comprise about two-thirds of all spontaneous abortions. Preconception exposures which induce chromosomal anomalies would need to exert a large effect in order to produce a detectable increase in the overall risk of spontaneous abortion.

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The complete report, entitled "The Role of Spontaneous Abortion Studies in Environmental Research," (Order No. PB 85-125 466; Cost: \$10.00, subject to change) will be available only from:

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