Book Reviews

W.L. Nyhan, K.L. Jones (eds.):
Prenatal Diagnosis of Mechanisms of Teratogenesis
March of Dimes Birth Defects Foundation. Birth Defects: Original Article Series, vol. 18, No. 3A
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As is well known the March of Dimes Birth Defects Foundation has done yeoman service over the years in disseminating information which will help in preventing birth defects and at the same time ameliorate the consequences of such defects on the families of individuals so afflicted and hence has aided society as a whole. This volume is well produced and contains a fund of knowledge which is useful to all who are involved in prenatal diagnosis and the evaluation of the ever-increasing spectre of potential teratogens to which the conceptus can be exposed.

Problems of teratogenesis have been overemphasized by our lack of knowledge and also the limitations of the test systems used. Because of such limitations, data have been frequently exaggerated because of the investigator’s inability to see beyond the confines of a narrow range of expertise. For all who are involved in the study of teratogenesis, it is of paramount importance that an appreciation of the animal models employed be gained because before any extrapolation to man a balanced objective assessment of the methodology is vital. There can be no deliberate experimentation to check out an uncertain hypothesis; the consequences of faulty judgement will not be measured solely in terms of a punctured ego, but in terms of human suffering.

Teratogenic activity, being a positive response is relatively easy to prove. However, any material can be teratogenic if given at the right dosage at the right time to the right species. Conversely, safety being a negative, can never be proven and one may only assess a degree of risk. Moreover, the assessment of risk requires the weighing of evidence, not just from teratogenic experiments, but also from knowledge of the rate of use of the compound in man, comparative pharmacokinetic and metabolic characteristics as well as conventional therapeutic and toxic responses. As to the real problems one has to allow for a myriad of interactions that might occur with variations in diet, genetic background and other therapeutic agents. In fact, despite active research in various areas and by various scientific disciplines, we still have a poor understanding of what a teratogen can do in one animal species and yet does not affect man. The converse is also true.

The contributors to this volume have in many instances been provocative but have produced some very fine contributions which are of interest to all specialties which are directly or indirectly involved in perinatal medicine.

The first section of the book deals with contributions pertaining to the mechanisms of abnormal morphogenesis and include such topics as maternal smoking, prenatal hydantoin exposure, malformations in infants of diabetic mothers, and the possible teratogenic effects of metronidazole. The latter is of interest, specifically as metronidazole has been used for over a quarter of a century by many physicians in many parts of the world for the treatment
of vaginal trichomoniasis and in many instances must have been administered to the gravid patient. The authors state that many studies in pregnant women treated in various stages of pregnancy did not yield evidence of teratogenic effects of this drug. However, they report 2 cases where metronidazole was administered between the 4th and 8th weeks of gestation and midline facial defects occurred in both the infants. Despite this, there is no proof that other factors could not have been involved and since a nihilistic approach to therapy is commonly taken to the first trimester of pregnancy such anomalies may occur without iatrogenic factors being involved. The second section of this volume deals with a series of papers concerning prenatal diagnosis and all are well written and contain up-to-date references. The final section deals with perinatology and includes a very provocative and interesting paper dealing with ‘Maternal metabolic complications following ritodrine or terbutaline therapy’. The authors emphasize that the concurrent use of corticosteroids can worsen the metabolic effects of beta-adrenergic drugs. They note that terbutaline alone appeared to worsen hypokalemia. However, they conclude that the results of their studies suggest that metabolic side effects should not generally be considered as a contraindication to the use of beta-adrenergic agents for the treatment of preterm labor in appropriate patients. I think this statement is true and due emphasis should be made to the final phrase: ‘Treatment of preterm labor in appropriate patients’. This was an interesting volume to read and should be available to all who are involved in perinatal medicine. The price, however, is exorbitant and puts the book out of the price range of residents and nurses in perinatology.

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N. Gleicher (ed.) Reproductive Immunology

The progress of scientific study and experiment during the past few decades has done more than add to the sum of facts. The whole outlook has changed and is changing. The sciences can no longer work independently. They are all branches of one great investigation and the discoveries of one react upon the other. All are liable to be influenced by any change of outlook which may come about through the advances of only one of them. The progress of one science may be conditioned by new methods and discoveries in another. A channel of inquiry may even be blocked before the goal is reached, but at the same time fields of study are becoming ever smaller but are at the same time undergoing a progress of liberation. Scientific investigation is becoming more departmentalized and each worker finds himself compelled to devote his mind and energies to a more restrictive field, and so the prospects of a final synthesis are growing more remote.

The scientist cannot define matter nor state the precise nature of sex, not because he knows little about them, but because he knows so much.

This volume deals with reproductive immunology. As a scientific discipline immunology includes immunity which deals with the adaptive response to infective agents, immunochemistry which deals with the chemical nature of antigens and antibodies and immunobiology which addresses the activity of the cells of the immune system and their interrelationship as well as their relationship to the environment.
Host defense mechanisms refer to the capacity of an organism to remain unaffected by harmless agents in its environment or rising within itself. For a proper understanding of the various intricacies of such protective mechanisms a number of inherent and acquired attributes require to be considered. These include nonspecific immunity and specific or acquired immunity. Acquired immunity is a highly individual property, specifically acquired through the individual’s personal exposure to harmful agents. Likewise, the immunologist discusses both humoral and cellular immunity, which in turn may both be divided into systemic and local.

All of these topics are addressed in this volume in a scholarly manner. The numerous essays address various aspects of developmental immunology, pregnancy immunology, immunologic disease in pregnancy as well as gestational trophoblast tumors and fertility immunology.

The incidence of Rhesus immunization is decreasing markedly due to the Rh immunoglobulin. Because administration of this immunoglobulin constitutes passive immunization there will always be failures. Rhesus immunization will remain as an infrequent but clinically significant problem. The incidence of ABO incompatibility will remain unaltered. The importance of early detection must be emphasized in view of the trend towards early discharge from the hospital. The incidence of immunization of irregular antibodies will probably increase slightly due to an increase in blood transfusion and induced abortions. Since many of these immunizations can cause clinically significant disease, aggressiveness in detection should be encouraged so as to provide optimal prenatal care for the fetus at risk.

Despite a great deal of work the true role of sperm-agglutinating antibodies on fertility has not been adequately elucidated despite reports of their presence in the undiluted sera of pregnant women and of users of oral contraceptives. In reading the various contributions pertaining to the immunology of infertility it is obvious that although our understanding of the immunologic factors in fertility is incomplete, the ease of laboratory diagnosis and the encouraging results of therapeutic efforts seem to justify the inclusion of such diagnostic identification of immunologic factors in all infertile couples when there is any doubt as to the role of other components in the reproductive cycle.

The final chapter deals with the risks that may accrue after vasectomy from immunologic factors such as delayed hypersensitivity.

In conclusion, this is an interesting volume with numerous interesting references which will prove to be of value not only to the obstetrician and gynecologist and urologist, but to pediatricians, microbiologists and transplantation biologists.

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