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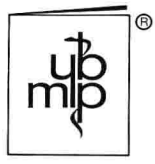

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Editors' Preface

THE SELECTION OF REVIEWS for the 27th volume of this series again posed a challenge to the editors to remain within the confines of twenty topics while highlighting some of the most important new insights into the practice of the broad field of internal medicine. To appreciate the complementary nature of these selections to others made in recent years, the reader is invited to consult the cumulative index in this volume. The reviews published over the past several years, still timely, swell our coverage to more than 100 essays that document relevant clinical investigations with approximately 10,000 references.

Again, the topics are grouped, for convenience, by each editor's selections, but they often defy conventional subspecialty boundaries.

ENDOCRINOLOGY AND METABOLISM

As the title of Dr. Bikle's review of the role of vitamin D in calcium metabolism implies, vitamin D is now recognized as more properly representing an important steroid hormone rather than simply a vitamin. Synthesized in the skin, this steroid must be 25-hydroxylated in the liver and, finally, is converted in the kidneys to 1-25 hydroxyvitamin D—the most active form of vitamin D. Serious clinical conditions can result from interruption of this processing of vitamin D at any of these stages, as well as from resistance to the action of the hydroxylated vitamin D at its peripheral tissue sites of action.

Diabetes insipidus, caused by a deficiency of antidiuretic hormone, and the opposite syndrome—inappropriate ADH secretion (SIADH)—are problems confronting the internist with increasing frequency. Drs. Moser and Notman have provided the physician with a straightforward discussion of the tests needed to diagnose these two conditions. The use and limitations of desmopressin in the treatment of diabetes insipidus, and of

lithium, demeclocycline, and water restriction in the treatment of SIADH are carefully and realistically presented.

Perhaps the most impressive practical achievement in the field of bone disease over the past decade has been the development of two very effective methods for the treatment of Paget's disease. Dr. Wallach's extensive review of this condition presents current thinking regarding the etiology, diagnosis and treatment of this disease. It is now apparent that, with calcitonin and diphosphonates, the great majority of symptomatic patients with Paget's disease can look forward to long-term suppression of their symptoms and disease.

Palpable thyroid nodules are detected in as many as 5 out of 100 adults in the United States. Determining whether or not such a thyroid nodule is malignant represents one of the most important, yet difficult, decisions facing the endocrinologist. Drs. Klonoff and Greenspan have carefully evaluated the risk factors for malignancy in the various histologic types of thyroid nodules and have presented a very practical scheme of diagnostic criteria by which both the internist and the endocrinologist can approach this important problem through differential diagnosis.

The differential diagnosis of accidental hypothermia is of particular importance since, as emphasized in Dr. Fitzgerald's review of the subject, the most common misdiagnosis in this disease is that of *death*! Dr. Fitzgerald extensively reviews the symptoms and underlying conditions that predispose to hypothermia. Therapy with active and passive warming is well discussed, as are the other treatment modalities.

GASTROENTEROLOGY

Drs. Cattau and Castell emphasize a highly practical clinical approach to the symptoms of esophageal disease, including the pathophysiology of esophageal dysfunction and its appropriate evaluation.

Numerous etiologic agents that can cause inflammatory bowel disease, from *Clostridium* to *Yersinia,* are described by Drs. Janowitz and Sachar. In addition, these authors present a comprehensive analysis of the natural history and therapy of Crohn's disease and ulcerative colitis, which remain the great etiologic puzzles of gastroenterology.

For those who want an update on one of the most exciting frontiers of biologic research, we are pleased to present Drs. Shorter and Tomasi's review. It tells about the critical role of the immune system of the gut in host defense against microbes and carcinogens, and reveals the gut to be the primary site for sensitization of immunocytes that subsequently inhabit other mucosal sites and secretory organs, such as the breast.

The chapter by Tucker and Schuster addresses the most common of all digestive disease problems, the irritable bowel syndrome. The authors emphasize the evidence (still incomplete) that this syndrome is caused by a primary defect in smooth muscle motility, rather than by psychic stress.

Infection and Immunology

C-reactive protein (CRP), the prototype acute-phase reactant, has finally been chemically defined, its primary structure has been identified, and the kinetics of its production by the liver have been documented. The chapter by Dr. Gewurtz and his colleagues focuses on the biologic properties of CRP and examines its relation to the amyloid-associated proteins and other acute-phase responses, thereby enhancing our interest in learning more about its interaction with the membranes of many host cells, as well as those of many microbial agents.

The clinical spectrum of vasculitis ranges from a primary disease process restricted to blood vessels in the absence of an underlying systemic disease to a secondary component of another primary systemic disease. Drs. Cupps and Fauci provide a clinical and pathologic outline and classification of these diseases that include their responses to immunosuppressive and anti-inflammatory therapeutic agents.

Rapidly evolving changes in the epidemicity and virulence of group A streptococcal infections in different parts of the world and varying frequencies of the appearance of their postinfectious sequels—rheumatic fever and glomerulonephritis—are reviewed by Dr. Stollerman, who emphasizes the apparent heterogeneity of strains within this species. Spectacular breakthroughs in the chemical definition of the M proteins and their purification, to the point of the definition of the primary structure of the molecules of these surface antigens, open the way to

the future preparation of streptococcal vaccines and to elucidation of the chemical basis of interactions and crossreactivity of streptococcal products with host tissues.

Circulatory Diseases

Doctors Swan and Ganz, the developers of the balloon flotation catheter system, outline the principles of hemodynamic monitoring. Their system has made bedside measuring of cardiac output end filling pressures possible. From these data, preload, afterload, and indices of cardiac contractility can be obtained. This information, in turn, more accurately defines cardiac function than does clinical evaluation based on physical findings. The authors clearly outline the indications for hemodynamic monitoring and demonstrate how this information can be used to assess cardiac function.

Drs. Lees and Myers describe the recent development of a series of techniques that hold promise for earlier and more accurate diagnosis of the anatomical as well as the physiologic deficit caused by peripheral atherosclerosis without resorting to invasive procedures. The authors clearly describe the principles upon which these techniques are based. This understanding will allow the reader to make an intelligent individual selection of the test most likely to answer the clinical question being asked.

The various types of hypertension that occur during or are complicated by pregnancy are reviewed by Dr. Sullivan. Unfortunately, the causes and natural history of these subsets have been poorly defined. As a result, the morbidity and mortality as well as the effect of therapeutic intervention are incompletely documented. Nevertheless, Dr. Sullivan's review points out that much is known about the pathogenesis of such conditions as eclampsia and preeclampsia, and makes recommendations concerning management based on intelligent therapeutic principles.

The use of calcium antagonists in clinical medicine, especially in clinical cardiology, has dramatically increased in recent years. Doctors Hope and Lazzara briefly review the role of calcium ions in the excitation-contraction process. The reader is thus provided with a clearer understanding of the biochemical basis for the use of these "slow channel blockers" in the

treatment of cardiac arrhythmias and various types of angina pectoris. Other emerging uses of the calcium antagonists in the practice of cardiology are described.

Hematology and Oncology

Immunoregulation as it relates to autoimmunity is the central problem in the pathogenesis of many diseases. Drs. Miller and Schwartz, in an exceptionally lucid article, present the latest views in this rapidly moving field.

Acquired aplastic anemia is a devastating syndrome, previously nearly always lethal. Drs. Rappeport and Nathan present current experiences from many centers. Most patients may now be successfully treated with marrow transplantation, if suitable conditions prevail.

Cis-platinum is a recently introduced antineoplastic agent that differs from all other chemotherapeutic drugs. It is especially effective in the treatment of testicular cancer. Drs. Williams and Einhorn, leaders in its evaluation, provide a concise review of the present status of "the most exciting antineoplastic agent that has entered clinical practice in a number of years."

Adverse pulmonary reaction to transfusion may occur in several clinical settings and constitutes one of the more common causes for the adult respiratory distress syndrome and shock lung. Dr. Jacob and his co-workers have provided most of the new insights into cause and management. Drs. Hammerschmidt and Jacob have written an entertaining and authoritative article on this topic.

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