
Advances in Internal Medicine

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Editors' Preface

In selecting the topics and authors for Volume 32 of *Advances in Internal Medicine*, the editors have, as usual, been obliged to look both forward and backward; forward, of course, to bring our readers the appropriate condensation of new medical science and experience as we perceive its readiness for assimilation by internists; backward to determine whether what we had presented previously is either outdated or in need of extension and clarification.

The articles of Volume 32 of *Advances in Internal Medicine* exemplify this effort very well. For example, in cardiovascular diseases, we present one of the most pathophysiologically useful discoveries of recent years—the atrial natriuretic peptides. This newly discovered hormone appears to be the opposing force to the well-known hormones, such as angiotensin, that conserve salt and water and protect against hypovolemia by vasoconstriction. The atrial natriuretic factors (ANF) have the opposite effect by producing salt and water diuresis and promoting vasodilation. No doubt a fuller understanding of ANF's actions will emerge rapidly in the next few years. Exciting as these new circulatory insights may be, it is just as crucial for us to review the validity of some of our older cardiologic concepts. To that end, the presentations of the management of angina pectoris, limitations and indications for coronary artery bypass, and the importance of recognizing the electrocardiographic harbingers of ventricular arrhythmias are all dealt with by masters of these subjects.

The editors hope that our readers will perceive the similar logic of our selections in the other subspecialties in internal medicine and that the incisive and critical reviews presented will continue to enlarge our understanding of internal medicine and to refine its practice. An introduction to each of the topics follows.

Cardiovascular Diseases

Atrial natriuretic factor has attracted more interest from the biomedical research community than any endogenous substance since cyclic AMP. Dr. Buckalew and his colleagues have tackled the task of summarizing the rapidly accumulating knowledge of the diverse effects of this natriuretic hormone which plays a major role in the regulation of the cardiovascular system in both health and disease. As the authors suggest, it is likely that the natriuretic and antihypertensive effects of ANF will be exploited long before its full physiologic role is fully understood.

An expanded concept of angina pectoris has resulted from direct observations of coronary blood flow made possible by the technological advances of the past decade. Acute transient myocardial ischemia may result

from a variety of different mechanisms that interfere only transiently with coronary blood supply in the presence of a wide range of coronary disease. The heterogeneity of the syndrome of angina pectoris in a wide spectrum of patients is admirably summarized by one of the major contributors to our knowledge of vasospastic coronary disease, Dr. Attilio Maseri.

Few procedures have caused as much discussion (or cost as much money) as coronary artery bypass surgery. Studies designed to evaluate the results of coronary artery bypass grafts (CABG) have not been easy to perform nor to interpret. The editors have sought a very thoughtful internist's view of the overall results of the best of these studies and Dr. Thomas Ryan, a respected participant in and student and critic of CABG, has responded with a fine summary of what we can currently expect to achieve with this procedure.

The clinical syndromes characterized by an abnormally long Q-T interval in the ECG are classified at present as acquired (rate-dependent), congenital (adrenergic-dependent), and miscellaneous. The therapy of each differs depending on the causes, the principal ones of which are drugs (for the acquired form), excessive sympathetic activity (for the congenital form), and a variety of causes for the miscellaneous group. Dr. Charles Kossmann treats us to an analysis of the electrophysiology and clinical pharmacology of the long Q-T interval syndromes that should improve the precision of our diagnosis, treatment, and management of these aberrations of cardiac conditions.

Immunology, Oncology, and Infection

A few decades ago, staphylococci that were coagulase negative were assigned to the broad category of "staph albus" and dismissed as relatively innocent commensals in all but rare cases. The advent of intravenous catheters and plastic prostheses plus the therapeutic and prophylactic barrage of the broad spectrum antibiotics against nosocomial infections have resulted in the emergence of a formidable new foe with an old name but with quite a new personality. The "new" coagulase negative staphylococcus of nosocomial notoriety has some very frightening properties that have advanced it to the status of a major hospital-acquired pathogen. Dr. Gordon Christensen, who pioneered in researching these new properties, brings us up-to-date on the most worrisome current infection in hospital practice.

Only a short time ago, the prospects of controlling the systemic helminthic infections that plague several billions of the world's population were very dim indeed. Since its synthesis a decade ago, praziquantel has revolutionized the treatment and prevention of schistosomiasis and diseases caused by several other parasitic helminths. The anthelmintic effects of praziquantel extend to treatment of human cestode infections in the gastrointestinal tract, and more importantly, to the treatment of cysti-

cercosis, especially the cerebral form of the infestation. Dr. Adel Mahmoud ably reviews current knowledge of praziquantel's pharmacology, and its preventive and therapeutic applications to diseases caused by the flukes and tapeworms that prey on a huge Third World population.

Lest systemic helminthiasis, however common and awesome a worldwide problem, may seem rather remote from the daily practice of internal medicine in the Western world, we have selected a review that deals with a more common illness but one not receiving the attention by internists it deserves—the treatment of the common cold. Drs. Lowenstein and Parrino's delightful survey of the huge cost of the common cold in time and in over-the-counter remedies reminds us of the important negative effects that some of the components of these nostrums may have on patients with chronic underlying diseases. Judging from what we see many internists casually prescribe for the common cold, a review of appropriate management is warranted.

Hematology

Platelets, the smallest of the blood cells, are metabolically the most active; they are involved in many normal and pathologic processes. They serve beneficial roles in hemostasis, wound healing, inflammation, and phagocytosis of foreign particles. But they also serve deleterious roles in pathogenesis of atherosclerosis and other occlusive vascular diseases, in transplant rejection, vasculitis, and thrombotic thrombocytopenic purpura. In all of these roles, whether advantageous or harmful, platelets require "activation." The platelet contains actin, myosin, and an abundance of ATP; it is an analogue of muscle cells and for its activation requires calcium. Drs. Ahn and Harrington and their colleagues have been leaders in examining the rates of calcium flux in the platelets of normal subjects and patients with various thrombotic disorders. They have found that an increased influx is characteristic of thrombotic disorders, with restoration to normal by use of calcium channel blockers, especially nifedipine. It is of particular interest that the increase exists in patients with hypertension, with hypercholesterolemia, or with diabetes even newly diagnosed, well in advance of any vascular complications. The authors provide an excellent summary of their findings and the related observations of other investigators working in this very important field.

For over 50 years it has been known that globulins have therapeutic value, and it has been 40 years since gammaglobulin was identified and prepared in clinically useful form. However, the earlier preparations that had to be given intramuscularly in large doses were painful and often caused tissue necrosis. In the past 5 years, preparations satisfactory for intravenous use have been available and now there are many manufacturers. Dr. Dwyer has had one of the broadest experiences in use of these preparations. He compares their properties, then critically reviews the nu-

merous indications for their use. The list will surprise you, both for its extent and diversity. Indeed, all who care for patients whether they be young or old, surgical or medical, can find something of value in his article, and to those of us interested in autoimmune diseases, the effects of intravenous IgG have been particularly intriguing.

Do the elderly become anemic as part of the aging process? In his scholarly review of the subject, Dr. Gardner cautions against this common assumption, warning that a slight decline in hemoglobin levels may take place but also warning that a level below 12 grams per dl should be regarded as abnormal, even in geriatric patients. He then gives a very useful outline for the approach to anemia in the elderly with special attention to forms now seen with increasing frequency, refractory anemias. While many of these patients have a limited life expectancy, they can be usefully subclassified and with appropriate albeit nonspecific marrow stimulation, often can be greatly benefitted. For 30 years Dr. Gardner has shown the way. This is a very valuable article for all physicians who deal with older patients.

Gastroenterology

In 1977 Rizetto and his colleagues in Turin, Italy, described a new pathogen, the Delta agent, which co-infects patients with hepatitis B. In this volume of *Advances* Drs. Bonino, Smedile, and Verme review the epidemiology and pathophysiology of this fascinating agent. Delta infection is now implicated as a major cause of fulminant hepatitis, relapsing acute hepatitis, and chronic active hepatitis. Serologic testing, available in most areas, allows accurate diagnosis of this new form of viral hepatitis.

Because the liver is a major source of metabolism and excretion of drugs, drug metabolism is often altered in patients with liver disease. Drs. Secor and Schenker review the basic principles of pharmacokinetics and pharmacodynamics, and provide practical guidelines for the use of commonly prescribed or newly released drugs in patients with impaired hepatic function. These authoritative guidelines should help the practicing internist to optimize drug therapy in patients with acute or chronic liver disease.

Over the past 5 years, laser applications in medical practice have grown exponentially, due to technologic refinements and increasing clinical experience. One of the pioneers in laser therapy, Dr. David Fleischer, reviews the applications of this technology in gastroenterology. The major benefit appears to be in patients with inoperable esophageal cancer, where palliative destruction of obstructing tumors is now routinely accomplished by endoscopic laser therapy. Many new applications, especially GI bleeding and cancer therapy, are under intensive investigation at present, and will probably become part of standard endoscopic therapy in the next few years.

Primary biliary cirrhosis remains a fascinating enigma for the internist.

Dr. Marshall Kaplan has prepared a scholarly review based on his vast experiences over several decades and a critical review of the literature. He stresses the importance of recognizing early disease, often manifested by elevation of alkaline phosphatase in an asymptomatic middle-aged woman. He also reviews the pathophysiology of the multiple complications of PBC including fat malabsorption, osteopenia, and autoimmune features. Although still considered an incurable liver disease, early results with long-term colchicine therapy appear promising.

Endocrinology and Metabolism

Hyponatremia is an increasingly recognized cause of obtundation and even death, especially in the elderly. In his extensive review of this problem Dr. Arieff emphasizes the complex causes of low serum sodium levels, but equally important, he discusses the current controversy regarding treatment of this disorder. He specifically questions the long-standing view that rapid correction of hyponatremia is contraindicated and provides convincing evidence that the most successful recovery from hyponatremia has been achieved by its prompt correction with hypertonic saline.

The question of the relative importance of environment and genetics in the pathogenesis of alcoholism represents one of the most important problems in this long-neglected field. Dr. Goodwin critically reviews the studies on identical twins and on the offspring of alcoholic subjects separated from their parents early in life, and concludes that there is strong evidence favoring a major genetic component in alcoholism. Further, the implications of these findings for a possible biochemical basis of alcoholism are reviewed and evaluated.

With the advent of computerized tomography, pituitary tumors are being diagnosed with increased frequency. The optimal treatment of the various endocrine disorders that may accompany such pituitary tumors represents a major challenge for the endocrinologist as well as the internist. Drs. Jordan and Kohler have provided an exhaustive and careful discussion of the various syndromes that may accompany pituitary adenomas and have realistically addressed the questions of the appropriate diagnostic techniques and therapy of these often subtle disorders.

The fact is sometimes overlooked that there are many causes of hypercalcemia that are quite unrelated to any parathyroid disorder. Drs. Strewler and Nissenson's review notes that, in fact, unwarranted parathyroidectomy is still carried out because of the misdiagnosis of hyperparathyroidism in such cases. Our increasing knowledge of the pathogenesis of familial hypercalciuric hypercalcemia, pulmonary disorders, malignancy, and the iatrogenic causes of hypercalcemia is reviewed. Finally, this overview brings us up-to-date on current therapy of these numerous and at times life-threatening states.

Our understanding of the causes of infertility in males has made rapid