



1984
YEAR BOOK OF
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The YEAR BOOK of

Medicine[®]

1984

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Table of Contents

The material covered in this volume represents literature reviewed up to August 1983.

Journals Represented.....	9
Infections , edited by DAVID E. ROGERS, M.D., <i>President, The Robert Wood Johnson Foundation, Princeton, New Jersey; Professor of Medicine, Cornell University Medical College; Clinical Professor of Medicine, University of Medicine and Dentistry of New Jersey-Rutgers</i>	
Introduction.....	11
1. SOCIAL CHANGE AND INFECTION	13
2. PNEUMOCOCCAL INFECTIONS	15
3. STAPHYLOCOCCAL INFECTIONS	23
4. URINARY TRACT INFECTIONS.....	27
5. NOSOCOMIAL INFECTIONS	31
6. SEXUALLY TRANSMITTED INFECTIONS	37
7. FUNGAL INFECTIONS	47
8. VIRAL INFECTIONS	49
9. THERAPY	53
10. MISCELLANEOUS	61
The Chest , edited by ROGER M. DES PREZ, M.D., <i>Professor of Medicine, Vanderbilt University School of Medicine; Chief of Medical Services, Veterans Administration Hospital, Nashville</i>	
Acknowledgment.....	87
11. ASTHMA	89
12. CHRONIC OBSTRUCTIVE PULMONARY DISEASE AND RESPIRATORY FAILURE	91
13. SLEEP APNEA HYPERSONNOLENCE SYNDROME	101
14. ADULT RESPIRATORY DISTRESS SYNDROME	125
15. INTERSTITIAL LUNG DISEASE.....	133
16. PULMONARY VASCULAR DISEASE INCLUDING PULMONARY EMBOLISM ..	139
17. LUNG CANCER.....	155
18. MYCOBACTERIAL DISEASE.....	169
19. OTHER INFECTIONS	183
20. MISCELLANEOUS	197
The Blood and Blood-Forming Organs , edited by MARTIN J. CLINE, M.D., <i>The Bowyer Professor of Medical Oncology; Department of Medicine, University of California School of Medicine, Los Angeles, California</i>	
	225

21. ERYTHROCYTES, APLASIA, AND BONE MARROW TRANSPLANTATION	227
22. LEUKOCYTES AND IMMUNODEFICIENCY	237
23. LEUKEMIA AND LYMPHOMA	247
24. ONCOLOGY	263
25. PLATELETS AND BLEEDING DISORDERS	277

The Heart and Blood Vessels, edited by EUGENE BRAUNWALD,
M.D., *Hersey Professor of Theory and Practice of Physic,
Herrman Ludwig Blumgart Professor of Medicine, Harvard
Medical School; Chairman, Department of Medicine,
Brigham and Women's and Beth Israel Hospitals, Boston*

26. ISCHEMIC HEART DISEASE	285
Coronary Risk Factors	285
Acute Myocardial Infarction	293
Chronic Coronary Artery Diseases	306
27. VALVULAR HEART DISEASE	337
28. CARDIAC ARRHYTHMIAS	341
29. HEART FAILURE	355
30. OTHER TOPICS	361

The Digestive System, edited by NORTON J. GREENBERGER, M.D.,
*Peter T. Bohan Professor and Chairman, Department
of Internal Medicine, University of Kansas Medical Center,
College of Health Sciences and Hospital*

31. ESOPHAGUS	369
32. STOMACH	379
33. SMALL BOWEL	393
34. COLON	409
35. LIVER	425
36. GALLBLADDER	467
37. PANCREAS	471

Metabolism, edited by PHILIP K. BONDY, M.D.,
*Professor of Medicine, Yale University School of Medicine;
Associate Chief of Staff for Research, West Haven Veterans
Administration Medical Center*

Introduction	479
38. PITUITARY GLAND	481
39. ADRENAL GLANDS	501
40. THYROID GLAND	511
41. GONADS	529
42. ECTOPIC HORMONES	537
43. CARBOHYDRATE METABOLISM	541
44. INBORN ERRORS OF METABOLISM	559

Kidney, Water, and Electrolytes, edited by FRANKLIN H. EPSTEIN,M.D., *William Applebaum Professor of Medicine,**Harvard Medical School; Director, Renal Unit,**Beth Israel Hospital, Boston 565*

45. GLOMERULAR DISEASES 567

46. OTHER DISEASES OF THE KIDNEY 581

47. CHRONIC RENAL INSUFFICIENCY 587

48. HYPERTENSION 595

49. TRANSPLANTATION 603

50. DIALYSIS 609

51. WATER, SODIUM, AND POTASSIUM 617

52. ACID-BASE 623

53. CALCIUM, MAGNESIUM, STONES, AND BONES 627

Rheumatology, edited by STEPHEN E. MALAWISTA, M.D.;*Professor of Medicine, Chief, Section of Rheumatology,**Department of Internal Medicine, Yale University**School of Medicine. 633*

54. RHEUMATOID ARTHRITIS 635

55. SYSTEMIC LUPUS ERYTHEMATOSUS 643

56. SPONDYLOARTHROPATHY AND REACTIVE ARTHRITIS 651

57. SCLEROSING SYNDROMES 659

58. CRYSTAL-ASSOCIATED ARTHRITIS. 665

59. VASCULITIS 671

60. INFECTIOUS ARTHRITIS 677

61. OTHER TOPICS 681

Journals Represented

Acta Endocrinologica
American Heart Journal
American Journal of Cardiology
American Journal of Medicine
American Journal of Nephrology
American Review of Respiratory Diseases
Angiology
Annals of Internal Medicine
Annals of Otolaryngology, Rhinology and Laryngology
Annals of Rheumatic Diseases
Annals of Surgery
Antimicrobial Agents and Chemotherapy
Archives of Internal Medicine
Arthritis and Rheumatism
Blood
British Heart Journal
British Journal of Diseases of the Chest
British Medical Journal
Bulletin of the World Health Organization
Cancer
Chest
Circulation
Clinical Endocrinology
Clinical Nephrology
Clinical Pharmacology and Therapeutics
Clinical Radiology
Critical Care Medicine
Diabetes
Digestive Diseases and Sciences
European Heart Journal
Fertility and Sterility
Gastroenterology
Gut
Hepatology
International Journal of Cardiology
Journal of Allergy & Clinical Immunology
Journal of the American College of Cardiology
Journal of the American Medical Association
Journal of Applied Physiology: Respiratory, Environmental and Exercise
Physiology
Journal of Clinical Endocrinology and Metabolism
Journal of Clinical Investigation
Journal of Infectious Diseases
Journal of Rheumatology
Journal of Thoracic and Cardiovascular Surgery
Kidney International
Lancet

10 / JOURNALS REPRESENTED

Mayo Clinic Proceedings
Medicine
Nature
Nephron
Neurosurgery
New England Journal of Medicine
New Zealand Medical Journal
Pediatrics
Pflüger's Archiv: European Journal of Physiology
Postgraduate Medical Journal
Proceedings of the National Academy of Sciences
Quarterly Journal of Medicine
Radiology
Reviews of Infectious Diseases
Science
South African Medical Journal
Stroke
Surgery
Surgery, Gynecology and Obstetrics
Surgical Neurology
Thorax
Transplantation
Western Journal of Medicine

PART ONE
INFECTIONS

DAVID E. ROGERS, M.D.

Introduction

It's hard to believe that I've been at this task—that of editing this section of the YEAR BOOK—for 17 years. And how remarkable are the changes in the nature and patterns of infection during this period! Early on, I was mightily impressed by how profoundly each advance in medical technology altered the kinds of infections creating problems for patients and their doctors. That continues apace. Each improvement in cancer chemotherapy or surgery or invasive procedure has as its unwanted companion a new set of infections produced by microbes previously thought to be benign. You'll see evidence of that throughout this section.

In recent years, I've been similarly impressed by the fact that changes in our society—the way we live, our social mores, our speed of travel, the ways we eat or bathe or what have you—create equally impressive shifts in the patterns of disease seen by infection watchers.

Dr. Walsh McDermott used to say (and often demonstrate) that one could swiftly diagnose the technologic sophistication of any nation or region by a quick look at the kinds of infections that killed its inhabitants. I would now add that one can learn a lot more about their attitudes and culture from watching the infections that make them sick.

So this year we've tried a brief new section which we've called "Social Change and Infection." You'll see what I mean by the above statement as you go through the section.

My joy—and the education I obtain—in working through this section with my colleagues, Drs. William Schaffner and Allen Kaiser, continues unabated. Obvious to any of you who know me well: my erudition in expounding on many new aspects of infectious diseases—therapy, plasmid fingerprinting, prostaglandins, or suppressor cells—stems from their coaching. A fantastic amount of information changes heads during our last cooperative "city desk" effort. Most of what's new moves from them to me. I contribute the "this is the way it was" war stories. We enjoy it thoroughly. We hope you will too.

DAVID E. ROGERS, M.D.

1. Social Change and Infection

1-1 Acute Rheumatic Fever: A Vanishing Disease in Suburbia.

There is no doubt that the incidence of acute rheumatic fever and the prevalence of rheumatic heart disease have declined considerably in North America and Western Europe during the past 50 years. Mack A. Land and Alan L. Bisno (Univ. of Tennessee Center for the Health Sciences, Memphis) retrospectively analyzed the incidence of acute rheumatic fever (ARF) in Memphis-Shelby County during the 5-year period from 1977 through 1981. Cases were identified by a review of the records of 12 of the 13 general medical-surgical hospitals in the area and by mail and telephone communication with 327 primary care physicians and neurologists.

Fifty-six patients with conditions diagnosed as ARF were identified. Of these, 15 failed to meet the modified Jones criteria. Sixteen of the 41 patients who met these criteria were diagnosed in Memphis,

INCIDENCE OF ACUTE RHEUMATIC FEVER BY RACE AND
LOCATION OF RESIDENCE, MEMPHIS-SHELBY COUNTY,
1977-1981

	Inner City	Suburban and Rural
BLACK		
All ages		
No. of cases	14	6
Incidence*	1.63	0.79
5-17 yr		
No. of cases	9	3
Incidence*	3.74	1.40
WHITE		
All ages		
No. of cases	1	3
Incidence*	0.34	0.15
5-17 yr		
No. of cases	1	2
Incidence*	1.63	0.49

*Cases per 100,000 population each year.
(Courtesy of Land, M. A. and Bisno, A. L.: JAMA 249:895-898, Feb. 18, 1983; copyright 1983, American Medical Association.)

but resided elsewhere. The overall incidence of ARF in Memphis-Shelby County for the 5-year period was 0.64 cases per 100,000 population per year. The patients ranged in age from 3 to 57 years (mean, 19 years; median, 16 years), and the peak age incidence (1.88 cases per 100,000 population per year) occurred in patients 5–17 years of age. Blacks were affected by the disease considerably more often than were whites. Among blacks, the incidence of ARF was more than twice as great for those living in the inner city than for those living in the suburbs; a similar trend was seen among whites, but the incidence was considerably lower (table). The most prominent major signs of disease in all 41 patients were carditis and polyarthritides, occurring in 22 and 25 patients, respectively. An unusual finding was the occurrence of chorea in more than 25% of the cases. Seven (17%) of the 41 cases were recurrences; these 7 patients ranged in age from 10 to 58 years (mean age, of 28 years).

In Memphis, ARF remains primarily a disease of socioeconomically deprived black schoolchildren. In contrast, the disease is nearing extinction in the middle-class, predominantly white suburbs of Memphis-Shelby County. The extremely low incidence of ARF demonstrated in this study necessitates reevaluation of current strategies of prevention and diagnosis of this disease, as such strategies were developed in an era when ARF posed a much greater threat to the public health in the United States.

► [This is a fine contribution and a most satisfying change. Rheumatic fever has dramatically dropped in incidence in recent years. Data obtained in New York City during 1963–1965 suggested an incidence of 61/100,000 in 5–14-year-olds.¹ In the current study in Memphis it was 1.88/100,000 in the 5–17 year age group. Thus, the authors suggest that we need to reevaluate our current recommendations regarding prevention and diagnosis of this dreadful disease.

But may we not be jumping the gun and underestimating the role that modern medical care may have played in affecting this splendid change? Let me climb on my soap box here.

First, this study (as have all previous studies) showed a much greater incidence of disease in poor inner city black children. (Here, actually a fivefold greater incidence.) While poverty, poor housing, and overcrowding are cited as well known contributions to streptococcal disease and subsequent rheumatic fever, how about differentials in the speed and adequacy of treatment of the poor vs. the affluent?

Second, although the authors cite the studies of Gordis in Baltimore during the 1960s—which showed a then much higher incidence of rheumatic fever (15.6/100,000 overall but a 40.2/100,000 incidence in low-income, predominantly black central city areas)—they fail to mention what I thought was the niftiest finding of the Gordis study.² Namely, that introducing a good and responsive system of primary medical care into that area rapidly and profoundly reduced the incidence of rheumatic fever.

Third, in trying to develop some crude indications of the adequacy of community care, we recently tried to approach this problem from the reverse direction. The methodology employed will not satisfy the purists, but the findings were so impressive that I tend to think they are on target.

Both streptococcal infection and acute rheumatic fever are reportable diseases. When we went through the simplified exercise of simply running the ratios of *reported* cases of rheumatic fever to *reported* streptococcal infection, I was startled to find that as late as 1960 there were 30 cases of acute rheumatic fever per 1,000 reported streptococcal infections—an incidence very close to that reported in the 1940s by Rammelkamp and his colleagues for *untreated* streptococcal disease. This despite the fact that effective treatment had been around for 15 years! But there followed a dramatic drop: to 13/1,000 in 1965, 7/1,000 in 1975, and 0.1/1,000 in 1980. This, bear in mind, corresponds nicely with the advent of Medicaid and clear evi-