Although the two articles which follow have been published in *Modern Concepts of Cardiovascular Disease*, they are being reprinted in *Circulation* because it is felt that their timeliness and importance justify their being given wide publicity. The authors constitute special committees appointed for the preparation of this material by the Council on Rheumatic Fever and Congenital Heart Disease of the American Heart Association.

**THE PROTECTION OF RHEUMATIC FEVER PATIENTS CARED FOR ON THE WARDS OF GENERAL AND CHILDREN’S HOSPITALS***

*By Edwin L. Harmon, M.D., Chairman, Homer F. Swift, M.D., Frederick J. Lewy, M.D., Dora E. Young, B.B.A., and Marjorie T. Bellows, M.S.*

Because questions frequently arise in connection with the protection of rheumatic fever patients in general and children’s hospitals, the following statements intended to guide such hospitals are issued by the Council on Rheumatic Fever and Congenital Heart Disease of the American Heart Association. They should be regarded as embodying certain principles which an individual hospital may apply in its effort to achieve protective measures.

1. Attacks of rheumatic fever frequently follow group A streptococcal infections—usually of the upper respiratory tract.

2. Persons who have recovered from an attack of rheumatic fever or who have rheumatic heart disease, even though the rheumatic fever may be quiescent, are especially liable to develop a recurrence of the disease if they contract a group A streptococcal infection. Moreover, a new rheumatic attack may be induced in a patient in the subacute active stage if he contracts a new infection with group A hemolytic streptococci of a serological type, or types, different from that which previously infected him.

3. The introduction of rheumatic fever patients into hospital wards or other environments, such as outpatient departments, where group A streptococcal carriers may be encountered, exposes them to hazards which should be avoided. To the extent that is reasonably possible in the individual institution, protection of such patients from contact with other patients, visitors or employees suffering from such hazardous infections should be practiced.

Patients suffering from scarlet fever, erysipelas, or acute glomerular nephritis may be considered specially dangerous even without further laboratory confirmation of type of organism involved. Sore throat or acute tonsilitis, especially when associated with exudates, distinct fever, and leukocytoses, may ordinarily be considered almost as dangerous. Milder upper respiratory infections are also dangerous. Dust and lint from bedding, handkerchiefs, and clothing in the immediate environment of a person who is expelling streptococci from his mouth or nose are potent sources of infection, as are also dishes and other utensils he uses.

4. Susceptible rheumatic fever patients while in dangerous environments such as open wards should receive treatment (chemotherapeutic or antibiotic drugs) that will markedly decrease their liability to contract such streptococcal infections. Furthermore, it is possible by suitable protective measures to render their environments comparatively free from danger of

---

* The term “Rheumatic Fever” is considered to include rheumatic fever and rheumatic heart disease.
reinfecting them with group A hemolytic streptococci. For suggested appropriate individual treatment see Section below.

5. To the fullest extent possible within the laboratory facilities of the hospital, or those available to the hospital, all reasonable efforts should be made to determine the presence of group A streptococci among patients or personnel of the ward and to deal appropriately with such cases when the organism is identified.

6. Mindful of the above facts and recognizing that in the average general hospital environment complete communicable disease ward precautions and techniques for the protection of the rheumatic fever patient are neither possible nor psychologically desirable, the hospital caring for such patients should nevertheless institute procedures and measures which will protect such patients. Detailed protective procedures should be developed by the individual institution through the collaboration of the appropriate responsible members of the medical, pediatric and laboratory staffs, Nursing Department and Administration.*

In developing protective measures which will in effect better protect the rheumatic fever patient from his environment and not others from him, strong emphasis should be placed on appropriate education of the patient, the family and hospital workers who are in regular or casual contact with rheumatic fever patients.

**Appropriate Individual Treatment**

(Chemotherapeutic or Antibiotic Drugs)

The following outline of appropriate treatment of the patient and streptococcal carriers in his environment may be considered adequate:

---


---

1. **Protecting the patient against streptococcal infections by**
   (a) Daily oral administration of small doses (0.5 to 1.0 gm.) of relatively non-toxic sulfonamides,
   or
   (b) Daily oral administration of 200,000 units of buffered penicillin G divided into two doses and given on an empty stomach. Other antibiotics may have a similar prophylactic influence and may be employed, but more experience is available with penicillin.

2. **Reducing the danger arising from other patients with streptococcal infections or from carriers of Group A hemolytic streptococci**
   (a) This can be effected by giving large doses of penicillin, or other antibiotics for a period of ten days to those patients who are expelling streptococci. Such attempted elimination or diminution of the carrier state with respect to hemolytic streptococci should be bacteriologically controlled if possible.
   (b) Patients who have been in contact with a known case of streptococcal infection should be treated in the same way as those with streptococcal infections.

3. **Attempting to cure streptococcal infections in a rheumatic fever subject early in the course of such an infection by intensive antibiotic therapy, started promptly and continued for 10 to 14 days.**

Prophylaxis of the rheumatic attack is probably most effectively attained by intramuscular administration of an antibiotic drug. It can also often be effected by oral administration of one million units of buffered penicillin G daily, divided into four equal doses given on an empty stomach. Rheumatic fever patients so treated should be carefully studied both clinically, and by suitable laboratory and electrocardiographic techniques, to ascertain whether rheumatic sequelae have been really prevented or only reduced to a sub-clinical level.
Rheumatic Fever is a recurrent disease which can be prevented. It is now generally agreed that both the initial and recurrent attacks of the disease are usually precipitated by infections with beta hemolytic streptococci. Therefore, the prevention of rheumatic fever and rheumatic heart disease depends upon the control of streptococcal illnesses. This may be successfully accomplished by (1) early and adequate treatment of streptococcal infections in all individuals and (2) prevention of streptococcal infections in rheumatic subjects.

I. TREATMENT OF STREPTOCOCCAL INFECTIONS

In the general population at least 3 per cent of untreated streptococcal infections are followed by rheumatic fever. Among certain individuals, especially those with previous rheumatic fever, the incidence is much higher. Adequate and early penicillin treatment, however, will prevent most attacks of rheumatic fever and eliminate streptococci from the throat.

A. Diagnosis of Streptococcal Infection

In most instances it is possible to recognize streptococcal infections by their clinical manifestations but laboratory tests may assist in establishing the diagnosis.

1. Epidemiology

The seasonal pattern and presence of similar cases in the community or household may be helpful. For example, streptococcal infections in the northern United States are most common from January through June. Likewise, a case of scarlet fever in one child would suggest that a sore throat in another has the same etiology.

2. Symptoms

a. Sore throat—onset sudden, in the tonsillar area, not in the trachea.

b. Headache—common.

c. Fever—variable—but generally from 101 to 104 F.

d. Abdominal pain—common, especially in children. Not too common in adults, but does occur.

e. Nausea and vomiting—common, especially in children.

f. These symptoms are usually not present: (1) simple coryza, (2) cough, (3) hoarseness.

3. Signs

a. Red throat—frequently beefy red, but if seen early the redness may be mild.

b. Exudate—usually present.

c. Glands—swollen, tender tonsillar glands at angle of jaw.

d. Rash—scarlatiniform (characteristic of scarlet fever—not common).

e. Discharge—otitis media and sinusitis indicated by (serous or purulent) aural or nasal discharge are frequent complications of streptococcus pharyngitis.

4. Laboratory

a. White blood count—generally over 12,000 and in children frequently over 20,000.

b. Throat culture—positive for hemolytic streptococci.

5. Therapeutic Response

Almost without exception patients with streptococcal infections are vastly improved within 24 hours after penicillin has been started and the temperature normal, or nearly so.

This therapeutic response is characteristic and if it does not occur, the chances are much against the disease being due to hemolytic streptococci.

B. Treatment of Streptococcal Infections

In order to be effective, treatment should be started immediately when a streptococcal infection is suspected and continued for sufficient time to eradicate the streptococci from the throat.

Penicillin is the drug of choice for treating streptococcal infections.

Both the oral and the intramuscular routes
of administration have been utilized successfully for penicillin therapy of streptococcal infections. Intramuscular injections have been proved to prevent rheumatic fever. The data on the value of oral penicillin as a preventive is less complete.

Oral administration in comparison with intramuscular administration has these advantages: (1) It is not as distasteful to many patients. (2) It requires fewer physician visits.

It has these disadvantages: (1) Larger amounts of penicillin must be used. (2) It is difficult to administer to vomiting or refractory children. (3) In some adults it gives rise to persistent diarrhea and pruritus ani. (4) It is difficult to be sure that treatment is continued for sufficient time and given in proper relation to meals to be effective.

1. Recommended Treatment Schedules
   a. Intramuscular Penicillin: (1) Children—one intramuscular injection of 300,000 units of procaine penicillin with aluminum monostearate in oil every third day for three doses. (2) Adults—one intramuscular injection of 600,000 units procaine penicillin in aluminum monostearate every third day for three doses. (Note: Less preferable, but usually effective—two doses as above at three day intervals.)

   b. Oral Penicillin: (1) First five days: 200,000 to 300,000 units one half to one hour before meals and at bedtime (total of 800,000 to 1.2 million units per day in 4 divided doses. The lesser amount for children, the larger amount for adults). (2) Second five days: 200,000 to 250,000 units one half to one hour before meals. (Total 600,000 to 750,000 units per day in 3 divided doses.)

   Note: To be effective, therapy should be continued for the entire ten days even though the temperature may return to normal and the patient may feel better within one or two days.

   c. Combination of Intramuscular and Oral Penicillin: Therapy may be begun with one injection of penicillin (300,000 units procaine penicillin with aluminum monostearate in oil) and then, beginning three days after the injection, continued for an additional seven days with oral penicillin according to the schedule b (2) outlined above.

   d. Other Medication. (1) Aureomycin is less effective than penicillin in controlling streptococcal infection but is especially useful in those sensitive to penicillin. Dosage: Total 10 mg per pound of body weight in four divided doses daily for two days. Cut dose in half for remaining eight days of therapy.

   (2) New preparations of penicillin: These may be effective and even preferable to the treatment schedules outlined, but at present they have not had sufficient trial to warrant their recommendation.

   (3) Other antibiotics: At present there is inadequate data on their value.

   e. Not Recommended for Treatment: (1) Penicillin troches or lozenges. (2) Penicillin followed by sulfonamides. (3) Sulfonamide drugs.

   (Note: Recurrences of streptococcal infection should be treated as primary attacks.)

II. Prevention of Streptococcal Infections

A. General Rules for Prophylaxis

1. Who should be treated?
   All individuals under the age of eighteen who have had rheumatic fever or chorea and all those over this age who have had an attack within five years.

2. When should prophylactic treatment be initiated?
   At the end of the second week of the attack of rheumatic fever or any time thereafter when the patient is first seen.* Prior to the start of prophylaxis, beta hemolytic streptococci should be eradicated by proper treatment of the patient. (See methods of penicillin therapy recommended above.)

3. How long should prophylaxis be continued?
   In children, at least to the age of eighteen; in all those above this age, for at least five years from their last attack.

4. Should prophylaxis be continued during the summer?
   Yes.

* Note: In patients receiving ACTH or Cortisone, be cautious that other infections are not masked since the prophylactic dose is inadequate to treat such concurrent illnesses as pneumonia or meningitis.
B. Prophylactic Methods

1. Sulfadiazine

This drug has the advantage of being easy to administer, inexpensive and effective (other newer sulfonamides are probably equally effective). Although resistant streptococci have appeared during mass prophylaxis in the armed forces, this is rare in civilian populations.

a. Dosage—from 0.5 to 1.0 Gm. taken each morning throughout the year. The smaller dose is to be used in children under sixty pounds.

b. Toxic Reactions—these are infrequent and are usually minor. However, in any patient being given prophylaxis with sulfonamides consider all rashes and sore throats as possible toxic reactions to the drug, especially if they occur in the first eight weeks of prophylaxis. The chief toxic reactions are:

1. Skin eruptions: (a) Morbilliform—much like measles—continue drug with caution. (b) Urticarial—best discontinue treatment. (c) Scarlatiniform—often associated with sore throat and fever. Unsafe to continue drug.

2. Blood reactions: Leukopenia—Discontinue if white blood count falls below 4,000 and polymuclear neutrophiles below 35% because of possible agranulocytosis which is often associated with sore throat and a rash. Because of these reactions, weekly white blood counts are advisable for the first two months of prophylaxis. (The use of sulfonamides therapeutically for any reason in this period should be preceded by a white blood count.) The occurrence of agranulocytosis after eight weeks of continuous prophylaxis with sulfonamides is extremely rare.

2. Penicillin

Although experience with oral penicillin for the prophylaxis of rheumatic fever is more limited than that with the sulfonamides, the antibiotic promises to be a safe and effective prophylactic agent. Oral penicillin has the desirable characteristics of being bactericidal for hemolytic streptococci and of rarely producing serious toxic reactions. It has the disadvantages of being more costly than sulfadiazine and because of the need of giving it on an empty stomach, of being somewhat more difficult to administer.

Oral penicillin represents an alternative drug for rheumatic fever prophylaxis. It is especially important to use this agent for those who do not tolerate sulfadiazine.

a. Dosage: Although other routines of administration may prove satisfactory, the following schedules are suggested:

200,000 to 250,000 units two times daily is recommended. Since penicillin is best absorbed on an empty stomach, the time of administration should be ½ to 1 hour before a meal or at bedtime. A single dose of 200,000 to 250,000 units before breakfast is less preferable.

b. Toxic reactions: (1) Urticaria. (2) Reactions similar to serum sickness—they include fever and joint pains and may be mistaken for rheumatic fever. (3) Angioneurotic edema—although many individuals who have had reactions to penicillin can subsequently take the drug without trouble, it is safer not to use penicillin, if the reaction has been severe and particularly if angioneurotic edema has occurred.

REFERENCES


Denny, F. W., Wannamaker, L. W., Brink, W. R., Rammelkamp, C. H., and Guster, E. A.: Preven-
NEW DIET MANUAL

The American Heart Association and its affiliates have issued a new, comprehensive diet handbook, Food for Your Heart, for use by physicians in the dietary management of heart patients. The manual incorporates nine diets, sample menus, and the latest information on nutrition and heart disease. The manual also dispels many misunderstandings about reducing and special diets, and makes clear the reasons why only physicians should prescribe such diets for patients.

Endorsed by the American Medical Association’s Council on Foods and Nutrition, the new guide states that proper diet counts in the prevention and treatment of many kinds of heart disease, hypertension, and of some complications, such as edema.

Food for Your Heart was prepared by the staff of the Department of Nutrition, Harvard School of Public Health. Dr. Fredrick J. Stare, Chairman of the Department, headed a special committee of the American Heart Association, composed of authorities in the field, which supervised the preparation of the handbook.

The diet manual may be obtained by laymen from affiliated heart associations only on doctor’s prescription. It will also be distributed to physicians, nutritionists, nurses, dieticians, health departments, and hospitals.

The manual is tab-indexed for quick reference. Desirable weights and how to reach them, cholesterol and heart disease, sodium and heart disease, and general dietary principles are discussed. Low sodium diets are so arranged in the manual that the physician has only to mark the diet he wishes the patient to follow, and to indicate the list of foods from which the patient may choose for the day. These foods are listed according to weight and composition (fat, carbohydrate, and protein content), as well as varying levels of sodium restriction, so that the physician will have no difficulty in making quick adjustments in the patient’s diet, if he so desires. A pocket on the inside cover may be used by the physician for additional instructions to the patient.

The booklet may be obtained from affiliated Heart Associations or from the American Heart Association.

INTERNATIONAL CARDIOLOGICAL CONGRESS

The Organization Committee for the Second International Congress of Cardiology has held its first meeting in New York under the Chairmanship of Dr. Paul D. White, who will serve as President of the Congress. Co-Chairmen of the Committee are Dr. James L. Watt, Director of the National Heart Institute of the U. S. Public Health Service, and Dr. Irving S. Wright, President of the American Heart Association.

The Congress has been tentatively set for the week of September 12, 1954. Scientific Sessions will be held in Washington, D. C., and Bethesda, Md. Demonstrations and visits to exhibits are planned for the Washington area and special features will be scheduled in various other cities. The Committee also discussed the possibility of commercial exhibits.

The Committee membership includes representatives of the Armed Forces as well as officers and members of the Association and the Public Health Service.

AMERICAN SOCIETY FOR STUDY OF ARTERIOSCLEROSIS

The seventh annual meeting of this Society will be held Nov. 1 and 2, in Chicago. Factual 200 word abstracts on papers for this meeting...
must be submitted by May 30. Dr. Louis N. Katz, Michael Reese Hospital, Chicago 16, Illinois, is Program Chairman, and Dr. O. J. Pollak, P. O. Box 228, Dover, Delaware, is Secretary.

ANNUAL MEETING RESERVATIONS

All those planning to attend the American Heart Association’s Annual Meeting and Scientific Sessions at the Hotel Chelsea, Atlantic City, April 8–12, may obtain hotel reservation forms from the Association. Reservations should be mailed directly to the hotel in Atlantic City at the earliest possible date. The same hotel reservation form may be used by those desiring to attend the meetings of both the American Heart Association and the American College of Physicians.

MEETINGS

Mar. 1–7: 14th International Congress of Military Medicine and Pharmacy, Montevideo, Uruguay. Secretary, Dieccion General del Servicio de Sani-
dad Militar, Avenida 8 de Octubre No. 3040 esquina Mariano Moreno, Montevideo, Uruguay.

Apr. 8–12: Twenty-Ninth Annual Meeting, American Heart Association, Hotel Chelsea, Atlantic City, N. J.

Apr. 8–9: Assembly panels, Assembly meeting of the Scientific Council, American Heart Association, Hotel Chelsea, Atlantic City, N. J.

Apr. 10–12: Twenty-Sixth Scientific Sessions, American Heart Association, Hotel Chelsea, Atlantic City, N. J.

Apr. 13–17: American College of Physicians, 34th Annual Meeting, Hotel Haddon Hall-Chalfont, Atlantic City, N. J.


Apr. 23–25: 1st Western Hemisphere Conference of World Medical Association, Richmond, Va. Secretary-General, Dr. Louis H. Bauer, World Medical Association, 2 East 103rd Street, New York 29.

May 7–10: National Congress of Cardiology, Sevilla, Spain. Secretary, Dr. E. Benot, 3 Paseo de las Delicias, Sevilla, Spain.

May 15–16: Annual Spring Meeting, Council for High Blood Pressure, Cleveland, Ohio.
Management of Cardiac Asthma with Aminophyllin

Lombardo and Harrison define cardiac asthma as paroxysms of dyspnea occurring during sleep or after exertion, lasting minutes or hours, frequently associated with asthmatic squeaks and râles and with edema of the lungs. The basic underlying process is passive congestion of the lungs secondary to failure of the left side of the heart.

This cardiac asthma, or paroxysmal dyspnea, is one of the most frequent and distressing of the vicissitudes in the life of the patient with heart disease.

Searle Aminophyllin is almost a specific in the management of such patients. Its bronchodilating action increases vital capacity and relieves the dyspnea. It lowers venous pressure and shortens circulation time.

Other time-proved uses of Searle Aminophyllin include cardiac failure with or without Cheyne-Stokes respiration. Moyer and his associates found that Aminophyllin increases the cerebrovascular resistance thereby decreasing the cerebral blood flow.

Searle Aminophyllin also is highly effective in bronchial asthma. It is accepted by the Council on Pharmacy and Chemistry of the American Medical Association.

SEARLE Research in the Service of Medicine

JOHN HODGDON BRADLEY

PATTERNS

of

SURVIVAL

If there is any meaning for mice or men in the restless drive of life, a billion years of living should contain it." So says the author of this stimulating investigation of life from the simplest amebic beginnings to man's conscious striving. Dr. Bradley, noted paleontologist, traces through those billion years the discoveries of geology, paleontology, biology and anthropology correlated with their philosophic implications. He will hold the attention of every thoughtful reader.

Here is an examination of the various theories of the origin of life, a reading and interpretation of the record left by both vegetable and animal forms, simple and complex, extinct and living (in which one sees organic history as in no slight degree a record of stagnation and decay), and—emerging from the evolutionary processes—a basic pattern of successful living.

In his dramatic and thought-provoking review of the endless struggle to survive, Dr. Bradley makes constant analogy to man: "All other species have ultimately come to rest—either in some uniform and relatively stable adjustment for life, or in death. Man has come to rest in neither." "Geologic history shows that man to a large extent has made himself and his world, and to a large extent can change it. . . . Should majorities of men intelligently and sincerely attempt to extend the welfare of man as a species, who can say what dreams might not possibly come true?"

This second edition of Dr. Bradley's work is brought out at the suggestion of a number of scientific men—among them several Past Presidents of the American Heart Association—who have found in its pages such intellectual pleasure and stimulation, such broadening of outlook as to be shared with others of their profession. The publisher is happy to make this book available to all physicians, either by direct order or through your bookstore.

THE CRITICS SAY...

"A remarkably readable study of man's relation to his world, to the other creatures in it, past and present, and particularly of the kind of creature man has made of himself."—Joseph Henry Jackson, in The San Francisco Chronicle.

"Brilliantly thoughtful and often slyly humorous. . . . Dr. Bradley writes with lucidity and sometimes with loveliness. . . . He is a master hand at correlating science with philosophy."—The American Mercury.

"Dr. Bradley's many years of experience in research and teaching, specializing as he has in paleontology and historical geology, have given him an adequate background of factual information against which to throw the highlights of philosophical cogitation. His literary ability is exceptionally great, and his fluent sentences are a delightful contrast to the ponderous phraseology of the more pedantic scientists. . . . His conclusion concerning man's future is particularly pertinent."—Scientific Book Club Review.

"This book contains much challenging new material. It is pithy. Nearly every sentence is an epigram. It is outstanding from the standpoint of being scientifically good and of being readable. . . . Dr. Bradley looks at life and living objectively and is able to point out many interesting things that have escaped those who have been unable to focus their attention away from their own kind."—Bios.

"Dr. Bradley is a scholar whose literary style is more than a little poetic. He is persuasive and also stimulating. He tells his scientific story dramatically. . . . The thoughtful reader will welcome the demand for reedition as part of his enjoyment of this book."—The New York Times Book Review.

381 4th Avenue GRUNE & STRATTON, INC. New York 16
Announcing publication of a new bimonthly journal reporting on fundamental investigations related to the heart and circulation

Circulation Research

A JOURNAL of the AMERICAN HEART ASSOCIATION

EDITORIAL BOARD

Editor-in-Chief
CARL J. WIGGERS

Assistant Editor
ROBERT S. ALEXANDER

Alan C. Burton
Jefferson M. Crisman
Joseph E. Flynn
Harry Goldblatt
Donald E. Gregg
William F. Hamilton
Alrick B. Hertzman
Louis N. Katz
Charles E. Kossman
Hampden C. Lawson
Victor Lorber
Irvine H. Page
Otto H. Schmitt
Eugene A. Stead
Albert Szent-Gyorgyi

IRVING S. WRIGHT, President of the American Heart Association, states, “We are confident this new journal will be welcomed by the many physicians, investigators, and teachers who have long felt the need for an effective medium to integrate and disseminate new knowledge regarding fundamental problems which must first be solved before applied research can progress.”

CARL J. WIGGERS, Editor of CIRCULATION RESEARCH, states that it is intended to be “the medium for the best in various disciplines of fundamental research that may throw light on cardiovascular problems. These would include anatomic, biologic, biochemical, biophysical, morphologic, pathologic, and pharmacologic aspects, regardless of whether they emerge from laboratories of these basic disciplines or from clinical divisions.”

CIRCULATION RESEARCH begins publication as a bimonthly, January, 1953, 100 pages per issue. It will be printed in the same large format and on the same fine paper as CIRCULATION. Annually, $7.50 ($8.50 foreign). Combination subscription with CIRCULATION, $19.00 ($21.00 foreign). A. H. A. Membership-Subscriptions should be obtained directly through the American Heart Association (see Association News Section this issue).

ORDER NOW

☐ Please enter my subscription to CIRCULATION RESEARCH...

☐ Please combine the subscription with CIRCULATION...

Enclosed is check or money order for $

NAME ........................................................................
ADDRESS ..................................................................
IN SHOCK DUE TO MYOCARDIAL INFARCTION

INJECTION WYAMINE® SULFATE

(Mephentermine Sulfate)

elicits a gentle, sustained vasopressor response not obtained with any other available pressor amine

CASE HISTORY

Y. E.*...Myocardial Infarction

Female, aged 74; diabetic and hypertensive. E.K.G. showed changes consistent with recent anterior myocardial infarction. Acute left ventricular failure at time of admission responded to strophanthin. The following morning, B.P. fell from 130/90 to 120/70, and then to 90/60, with heart rate of 88. At this point, patient appeared to be in shock. Mephentermine, 15 mg. was given I.V., with prompt rise in B.P. to 110/68 in three minutes. Ten minutes after mephentermine administration, B.P. had risen to 142/60, with heart rate of 96, and dramatic clinical improvement. B.P. was subsequently maintained at approximately 130 to 160 systolic. Although patient was seriously ill throughout her hospital course, she was eventually discharged five weeks after admission, with congestive failure well controlled on maintenance digitalis.


WYAMINE INJECTION is supplied in vials of 1 cc. and 10 cc. Each cc. contains 15 mg. Wyamine base as Wyamine Sulfate in Water for Injection.
oral diuretic without equal

"...superior... in promoting sodium and water excretion." ¹
"...three-fourths the diuretic action of the standard
[meralluride by injection]..." ²
"...a valuable substance to replace parenteral diuretics
in patients who require continuous
diuretic medication." ³

NEOHYDRIN®
THE DIURETIC TABLETS THAT WORK

LIKE AN INJECTION

2. Greiner, T.; Gold, H.; Warshaw, L.; Palumbo, F.; Weaver, J.; Mathes, S.,

how to use this new drug

Maintenance of the edema-free state has been accomplished with
as little as one or two NEOHYDRIN Tablets a day. Often this dosage
of NEOHYDRIN will obtain per week an effect comparable to a
weekly injection of MERCUHYDRIN®. When more intensive ther-
apy is required one or two tablets three times daily may be
prescribed as determined by the physician.

Gradual attainment of intensive therapy is recommended to
preclude gastrointestinal upset which may occur in occa-
sional patients with immediate high dosage. In rare
instances a sensitivity to NEOHYDRIN may arise. Though
sustained, the onset of NEOHYDRIN diuresis is gradual.
Injections of MERCUHYDRIN will be initially necessary
in acute severe decompensation.

Contraindicated in acute nephritis and nephrosclerosis.

Any patient receiving a diuretic should ingest daily
a glass of orange juice or other supplementary
source of potassium. Any patient receiving a
diuretic should be watched for signs of deple-
tion in sodium and chlorides especially
in hot weather. Such depletion may
first manifest itself as a refractivity
to the diuretic and can be corrected
by ingestion of sodium chloride.

packaging

Bottles of 50 tablets.
There are 18.3 mg. of
3-chloromercuri-2-
methoxy-propyl-
urea in each tablet.
CONTENTS

STUDIES ON THE RENAL EXCRETION OF RADIOACTIVE DIGITOXIN IN HUMAN SUBJECTS WITH CARDIAC FAILURE
G. T. Okita, F. E. Kelsey, P. J. Talso, L. B. Smith and E. M. K. Geiling 161

THE EFFECTS OF HEXAMETHONIUM ON CERTAIN MANIFESTATIONS OF CONGESTIVE HEART FAILURE... Robert T. Kelley, Edward D. Freis and Thomas F. Higgins 169

ELECTROCARDIOGRAPHIC STUDIES DURING CARDIAC SURGERY
E. J. Jaruszewski, H. K. Hellerstein and H. Feil 175

SUPRAVENTRICULAR TACHYCARDIA COMPLICATING SURGICAL PROCEDURES. A STUDY OF THE CONTRIBUTING CAUSES, COURSE AND TREATMENT OF THIS COMPLICATION IN FIFTY PATIENTS
Wayne R. Rogers, Felix Wroblewski and John S. LaDue 192

ELECTROCARDIOGRAPHIC FINDINGS IN CARDIAC AMYLOIDOSIS
Albert J. Josselson and Raymond D. Pruitt 200

ISOLATED U WAVE NEGATIVITY.................................J. H. Palmer 205

COCCIDIOIDAL PERICARDITIS.................................Roger Larson and Robert E. Scherb 211

ALTERATIONS OF THE LESIONS OF ACUTE RHEUMATIC MYOCARDITIS DURING CORTISONE THERAPY.....................Abner Golden and John Willis Hurst 218

EFFECT OF CORTISONE ON THE SIZE OF EXPERIMENTALLY PRODUCED MYOCARDIAL INFARCTS
Aran S. Johnson, Schayel R. Scheinberg, Robert A. Gerisch and Harry C. Saltzstein 224

BALLISTOCARDIOGRAPHY. I. PHYSICAL CONSIDERATIONS
Maurice B. Rappaport, Howard B. Sprague and William B. Thompson 229

PHENOLIC COMPOUNDS IN THE TREATMENT OF RHEUMATIC FEVER. I. A STUDY OF GENTISIC ACID DERIVATIVES
Norman E. Clarke, Robert E. Mosher and Charles N. Clarke 247

RENAL EXCRETION OF WATER, SODIUM AND CHLORIDE. COMPARISON OF THE RESPONSES OF HYPERTENSIVE PATIENTS WITH THOSE OF NORMAL SUBJECTS, PATIENTS WITH SPECIFIC ADRENAL OR PITUITARY DEFECTS, AND A NORMAL SUBJECT PRIMED WITH VARIOUS HORMONES
Robert Birchall, S. W. Tuthill, W. S. Jacobs, W. J. Trautman, Jr., and Thomas Findley 258

CLINICAL PROGRESS. BALLISTOCARDIOGRAPHY. AN APPRAISAL OF TECHNIC, PHYSIOLOGIC PRINCIPLES, AND CLINICAL VALUE
Richard S. Gubner, Manuel Rodstein and Harry E. Ungerleider 268

ABSTRACTS..........................................................287

BOOK REVIEWS....................................................309

AMERICAN HEART ASSOCIATION.................................314