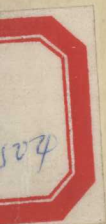


Drug Therapy for Headache



一九九三年九月十三日



Drug Therapy for Headache

edited by

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MARCEL DEKKER, INC.

New York • Basel • Hong Kong

Library of Congress Cataloging--in--Publication Data

Drug therapy for headache/edited by R. Michael Gallagher.

p. cm. -- (Inflammatory diseases and therapy; 6)

Includes bibliographical references.

Includes index.

ISBN 0-8247-8179-1 (alk. paper)

1. Headache--Chemotherapy. 2. Migraine--Chemotherapy.

3. Headache. I. Gallagher, R. Michael.

II. Series

[DNLM: 1. Headache--drug therapy. W1 IN41LA v. 6 / WL 342 D7945]

RB128.D785 1990

616.8'491061--dc20

DNLM/DLC

for Library of Congress

90-14029

CIP

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MARCEL DEKKER, INC.

270 Madison Avenue, New York, New York 10016

Current printing (last digit):

10 9 8 7 6 5 4 3 2 1

PRINTED IN THE UNITED STATES OF AMERICA

To Joanne

Foreword

The practice of medicine is an art,
not a trade; a calling, not a business;
a calling in which your heart will be
exercised equally with your head.

Sir William Osler

The care of a person suffering from frequently recurring headache of disabling severity requires all the skill, patience, empathy, understanding, and good will that a physician can command. In this volume Dr. Gallagher and his colleagues have well delineated the medications available to the physician that, when mixed with his or her skills, will help to control the problem. Like any other tool or implement, the result of the effort will depend largely on the skill with which these medications are employed.

Before one can be an artist—an essential in treating the patient with headache—one must first become thoroughly familiar with the available materials. Only when this has been achieved can their application be guided carefully—by a combination of science and instinct.

The popular explanation for the superb tone of the instruments produced by Stradivarius is based on his use of some secret ingredient in the varnish with

which they were coated. I suspect it was not a secret ingredient in the varnish but rather the skill, determination, and dedication by which it was applied.

Study well the lessons contained herein so that familiarity with the pharmacology of these medications may become second nature. Only then will the powers of the Intellect and Spirit be free to employ them appropriately. Affectionate support remains an essential ingredient to every prescription.

Perry S. MacNeal, M.D.

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Distinguished Clinician and Former President

American Association for the Study of Headache

Preface

The evaluation and treatment of the headache patient can be a challenging and sometimes frustrating experience for both the patient and the physician. Unfortunately, there are no sure diagnostic markers nor are there sure therapeutic regimens. Each headache sufferer is a unique individual who may not respond to treatment in the same fashion as others who experience similar symptoms. For this reason, it is necessary for physicians who desire to help headache sufferers not only to be familiar with headache syndromes but to possess an expanded armamentarium of pharmacological agents with appropriate alternatives.

There are only a handful of medications specifically indicated for the headache diagnosis. Practitioners have had to be resourceful, selecting medications for headache treatment from among those commonly utilized for other medical conditions. This book of drug treatment for headache patients was created to be an easily understood reference text for all physicians interested in helping these sufferers. The majority of this text discusses various pharmacological agents used by specialists in treating the more commonly encountered chronic headache conditions. Outstanding clinicians and researchers of international reputation have contributed their expertise by presenting appropriate therapies with alternatives in a simple and logical manner.

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Contents

Foreword	v
Preface	vii
Contributors	xi
1. The Treatment of Headache: A Historical Perspective <i>John Edmeads</i>	1
2. Classification of Headache <i>R. Michael Gallagher</i>	9
3. Pathophysiology, Genetics, and Epidemiology of Headache <i>J. Keith Campbell</i>	15
4. Influencing Factors of Headache <i>R. Michael Gallagher</i>	29
5. Evaluation of the Headache Patient <i>R. Michael Gallagher</i>	45
6. Rationale of Headache Therapy <i>Arthur H. Elkind</i>	55

7. Prophylactic Treatment of Migraine	65
<i>R. Michael Gallagher, John Stirling Meyer, Makoto Ichijo, Masahiro Kobari, Jamshid Lofti, F. Clifford Rose, P. T. G. Davies, and Glen D. Solomon</i>	
8. The Abortive Treatment of Migraine	95
<i>Ninan T. Mathew</i>	
9. Treatment of the Mixed Headache Syndrome	115
<i>Seymour Diamond</i>	
10. Pharmacologic Treatment of Cluster Headache	131
<i>R. Michael Gallagher, John Stirling Meyer, Makoto Ichijo, Masahiro Kobari, and Jamshid Lofti</i>	
11. Treatment of Muscle Contraction (Tension) Headache	151
<i>William G. Speed III</i>	
12. Treatment of Psychogenic Headache	163
<i>Brian E. Mondell</i>	
13. Pharmacologic Therapy for Headaches in Children	173
<i>Gerald S. Golden</i>	
14. Headaches in the Elderly	183
<i>Frederick G. Freitag</i>	
15. Treatment of Other Headaches	203
<i>R. Michael Gallagher</i>	
16. Analgesics in the Treatment of Headaches	213
<i>Eugene Mochan</i>	
17. Headache Drug Interactions	233
<i>Frank J. DiSerio</i>	
18. Treatment of Facial and Scalp Neuralgias	255
<i>James R. Couch</i>	
Index	275

1

The Treatment of Headache: A Historical Perspective

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INTRODUCTION

The study of headache is a complex and occasionally confusing endeavor. Often, treatments are introduced because they make sense according to the pathophysiology of the day; that doctrine in time falls from favor, but the therapy it spawned sometimes endures for that most incontestable of reasons—because it works. This is not an isolated situation. It is a theme that has recurred since antiquity.

ANCIENT APPROACHES

In antiquity, diseases were explained through the agency of supernatural forces, and treated by magical methods, which included prayers to countervailing deities, and the application, often to the suffering head, of objects designed to propitiate the malevolent spirit.

The Sumerian prescription of 4000 B.C. for headaches was:

Take the hair of a virgin kid. Let a wise woman spin it on the right side and double it on the left, and tie twice seven knots. Perform the incantation of Eridu. Bind therewith the head of the sick man ... cast therewith the water of incantation over him, that the headache may ascend to heaven.

Clearly, this treatment was efficacious, for a closely similar prescription, dating from about 2500 B.C., was found in a temple in Thebes, Egypt:

The physician shall bind a crocodile made of clay, with an eye of faience, and straw in its mouth, to the head using a strip of fine linen upon which has been inscribed the names of the gods, and he shall pray (Fig. 1).

In modern scientific terms we recognize two elements in the success of this therapy: the placebo effect and the compression of the scalp, possibly collapsing painfully distended vessels.

In the GrecoRoman era, although the gods were still important in the genesis of disease, increasing emphasis was placed upon humors and vapors that permeated the body, causing adverse effects. Hippocrates (400 B.C.) advocated bleeding as a treatment for headaches to remove the offending humors, to be followed by the application of the herb, hellebore, to the head. Galen (150 A.D.) recommended purging, presumably to rid the body of noxious influences by another route. The idea of placing magical substances in proximity to the aching head persisted in the work of Pliny the Elder (70 A.D.), who treated headache by tying a hangman's noose around the head, or by suspending from the neck, on a red string, some moss scraped from the head of a statue.

THE MEDIEVAL ERA

Some of the magical concoctions used by physicians became increasingly bizarre during the Middle Ages. Around 800 A.D., when the vulture was much prized as an agent of healing, there appeared in the text *Incipit Epistula Vulturis* the following medical observation:

The bones from its head wrapped in deer skin will cure any pain and headache; its brain, mixed with the best of oil and put in the nose, will expel all ailments of the head.

Less dramatic methods of treatment gradually evolved, so that in 13th century Italy, headache sufferers had a poultice of opium and vinegar placed upon their throbbing heads. (There is some evidence that the vinegar aided the percutaneous absorption of the opium.)

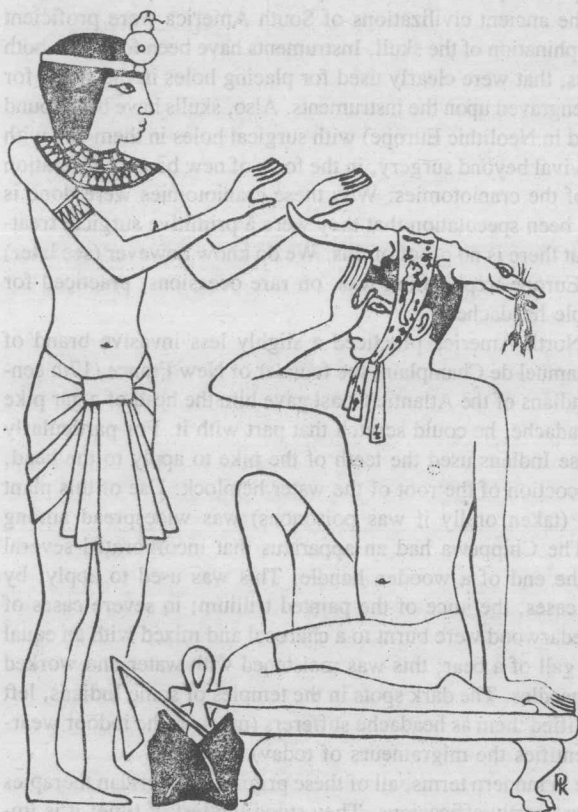


Figure 1 An early Egyptian cure recommended for headache.

The Arabian physician, Abulcasis (936-1013 A.D.) directed a more surgical approach to the problem of headache, applying a hot iron to the affected forehead, or incising the painful temple and applying garlic to the wound. The parallel to the cryosurgery of superficial temporal arteries practiced in North America in the 20th century is evident.

The magic of the New World was somewhat different from that of the Old, but remarkably similar systems of treatment apparently evolved independently and were traditional by the time the European explorers of the 16th and 17th century recorded them. The Incas of South America, when treating headache, would

incise the scalp, and drip coca juice into the incision; the active ingredient of coca juice, cocaine, probably functioned as a potent local anesthetic. There is some evidence that the ancient civilizations of South America were proficient in the technique of trephination of the skull. Instruments have been found, in both Incan and Mayan sites, that were clearly used for placing holes in the skull, for the instructions were engraved upon the instruments. Also, skulls have been found in South America (and in Neolithic Europe) with surgical holes in them and with some evidence of survival beyond surgery, in the form of new bone proliferation around the margins of the craniotomies. Why these craniotomies were done is not known; there has been speculation that they were a primitive surgical treatment for headache, but there is no proof of this. We do know however (see later) that in 17th century Europe trephination was, on rare occasions, practiced for the relief of intractable headache.

The Indians of North America practiced a slightly less invasive brand of headache medicine. Samuel de Champlain, the founder of New France (17th century) wrote that the Indians of the Atlantic Coast gave him the head of a gar pike so that if he had a headache, he could scratch that part with it. For particularly severe headache, these Indians used the teeth of the pike to apply to the head, by scarification, a decoction of the root of the water hemlock. Use of this plant for local application (taken orally it was poisonous) was widespread among neighboring tribes. The Chippewa had an apparatus that incorporated several needles fastened at the end of a wooden handle. This was used to apply, by scarification in mild cases, the juice of the painted trillium; in severe cases of headache, sticks of cedarwood were burnt to a charcoal and mixed with an equal quantity of the dried gall of a bear; this was moistened with water and worked into the temple with needles. The dark spots in the temples of some Indians, left by the charcoal, identified them as headache sufferers (much as the indoor wearing of sunglasses identifies the migraineurs of today).

Although bizarre in modern terms, all of these primitive American therapies must have been at least partly efficacious. They stood the test of time; it is impossible to believe that pragmatic civilizations that flourished in such harsh environments would carry with them through generations the excess baggage of treatments that did not work. We see in these primitive treatments the rudiments of local surgical attack on the scalp, possibly interrupting nerve pathways, and some elements of pharmacotherapy—and, undoubtedly, the ubiquitous placebo response.

RENAISSANCE HEADACHE TREATMENT

Back across the Atlantic, European medicine was evolving slowly toward a scientific basis, but still used those appurtenances of traditional medicine that seemed

to be helpful. Bleeding was still much in vogue. The painful temple would be incised and a heated glass globe would be applied over it; as the globe cooled, setting up a vacuum within it, blood (and possibly maleficent humors) were sucked from the head into the globe. Sometimes, the globes were applied without incisions, drawing blood to the surface (cupping). Surgical division and ligation of the superficial temporal artery was popular in the 17th and 18th centuries. Thomas Willis (1660) treated his eminent patient, Lady Conway, with mercurials, venesections, and one arteriotomy. He was, however, not in favor of more aggressive treatments. The same Lady Conway was also under treatment for her intractable migraine by her cousin, William Harvey, who made certain recommendations with which Willis did not agree. Willis wrote

The opening of the skull cry'd up by many, but rarely attempted ... this our most ingenious Harvey endeavoured to persuade a Noble Lady labouring with a most grievous inveterate headache, promising a cure from thence ... but neither she nor any other would admit that administration ... I think opening of the skull will profit little or nothing.

There were even some critics of the more conservative temporal arteriotomy. Fordyce, in his book *De Hemisphera* (1758) argued against arteriotomy, making the point that not infrequently a patient would obtain temporary relief from an arteriotomy on one side of the head, only to have the pain begin anew in other areas of the head—an observation evidently unheeded by many 20th century surgeons.

Pharmacotherapy during the Renaissance was herbal, with drugs such as valerian and opium widely prescribed; in addition, mercurials and other mineral substances were used; they were prescribed empirically, with little apparent rationale and with little apparent efficacy.

THE 19TH CENTURY

At the opening of the 1800s, headache treatment was simply a shadow cast by preceding centuries. For example, William Heberden (1802), the foremost physician of his day, treated headaches with methods that were 200 years old, including blistering the head, bleeding, cupping, and emetics. Slowly, with the advent of the new science of chemistry, and with increasing communication between physicians with greater opportunity for exchange of ideas, new treatments for headache evolved. These were largely pharmacologic. Sometimes they worked—although seldom did those prescribing them know why. Another feature of 19th century medicine was a welcome conservatism, exemplified by the statements of one of the neurological giants of the day, Romberg (1853), about the treatment of headache: "We must avoid everything that is unnecessary," and "The local