

W1 AM521NN
V.10 NO.3 1996
C.D1-----SEQ: SR0060761
TI: AMERICAN JOURNAL OF
RHINOLOGY 12/12/96

Journal of RHINOLOGY

V O L U M E 1 0 N U M B E R 3

WINNER OF THE 1995 AMERICAN RHINOLOGIC SOCIETY BASIC SCIENCE AWARD

NEURONAL HOMEOSTASIS IN MAMMALIAN OLFACTORY EPITHELIUM:
A REVIEW

J. David Holcomb, M.D., Scott Grabam, M.D., and Anne L. Calof, Ph.D.

FUNCTIONAL ENDOSCOPIC SINUS SURGERY, SYMPTOMATIC RELIEF:
A PATIENT PERSPECTIVE

Louis J. Conte, D.O., and Norman Holzberg, M.D.

ENDOSCOPIC PITUITARY SURGERY: A MINIMALLY INVASIVE TECHNIQUE

Dbarambir S. Sethi, M.D., F.R.C.S., F.A.M.S., and Prem K. Pillay, F.R.C.S. (Singapore)

IMMUNOHISTOCHEMICAL ANALYSIS OF MONONUCLEAR INFLAMMATORY CELLS IN
NASAL AND SINUS EPITHELIUM IN CHILDREN WITH SINUSITIS

Maria Pena, M.D., Linda Brodsky, M.D., Janet Gorfien, M.S., and Bernice Noble, Ph.D.

COMPARISON OF THE RELATIVE ABILITIES OF ACOUSTIC RHINOMETRY,
RHINOMANOMETRY, AND THE VISUAL ANALOGUE SCALE IN DETECTING CHANGE
IN THE NASAL CAVITY IN A HEALTHY ADULT POPULATION

A. Tomkinson, F.R.C.S., and R. Eccles, D.Sc. (United Kingdom)

COMPARISON OF SYMPTOM SEVERITY IN NATURAL AND EXPERIMENTALLY
INDUCED COLDS

Ronald B. Turner, M.D., Theodore J. Witek, Jr., Dr.P.H., and Donald K. Riker, Ph.D.

SUBCELLULAR DISTRIBUTION AND PHARMACOLOGICAL IDENTIFICATION OF MI
RECEPTORS IN THE SUBMUCOSAL NASAL GLAND ACINAR CELLS OF GUINEA PIGS

*Seiichiro Nakabayashi, Katsuhisa Ikeda, Akira Shimomura, DaZheng Wu,
Naribisa Ueda, Masayuki Furukawa, and Tomonori Takasaka (Japan)*

EFFECTS OF SOME PRESERVATIVE AGENTS ON RAT AND GUINEA PIG TRACHEAL
AND HUMAN NASAL BEAT FREQUENCY

*Susanna Joki, Veijo Saano, Juhani Nuutinen, Pasi Virta, Pekka Karttunen,
Matti Silvasti, and Elina Toskala (Finland)*

MEDICAL THERAPY FOR THE PREVENTION OF RELAPSING NASAL POLYPOSIS: A
PILOT STUDY ON THE USE OF FUROSEMIDE BY INHALATION

D. Passali, L. Bellussi, M. Lauriello, A. Ferrara, and J. M. Bernstein (Italy)

SPECTRUM OF SEASONAL ALLERGIC RHINITIS SYMPTOM RELIEF WITH TOPICAL
CORTICOID AND ORAL ANTIHISTAMINE GIVEN SINGLY OR IN COMBINATION

*Carter D. Brooks, M.D., Steven F. Francom, Ph.D., Bruce G. Peel, B.S.,
Brenda L. Chene, R.N., and Karen A. Klott, R.N.*

ABSTRACTS FROM THE WORLD RHINOLOGY LITERATURE

M A Y - J U N E 1 9 9 6

This material was copied
at the NLM and may be
Subject to US Copyright Laws

RHINOLOGY AND NASAL ALLERGY
YEAR BOOK 1996
Table of Contents

PUBLISHER'S PREFACE	xi
1. Allergic Rhinitis	1
2. Drug Treatment	31
3. Eosinophils/Basophils/Mast Cells in Rhinitis	77
4. Fungal Disease of the Upper Respiratory Tract	87
5. Immunology of the Nose	95
6. Nasal Polyps	121
7. Nasal and Sinus Neoplasm/Granuloma	131
8. Non-Allergic Rhinitis	141
9. Nasal Physiology and Anatomy	153
10. Microbiology of Sinusitis	167
11. Miscellaneous	191
12. Radiologic Diagnosis of the Nasal Cavity and Paranasal Sinuses	225
13. Rhinitis	239
14. Sinusitis	259
SUBJECT INDEX	293
AUTHOR INDEX	301

This material was copied
at the NLM and may be
Subject US Copyright Laws

American Journal of Rhinology

Devoted to Immunology, Physiology, Biochemistry,
and Clinical Research of the Nasopharynx

95 PITMAN STREET
PROVIDENCE, RI 02906
(401) 331-2510
FAX (401) 331-5138

EDITORIAL BOARD

Co-editors in Chief

David W. Kennedy, M.D.
(Otorhinolaryngology)
Professor & Chairman
Department of Otorhinolaryngology
Head and Neck Surgery
University of Pennsylvania Medical Center
5 Silverstein, 3400 Spruce St.
Philadelphia, PA 19104

Philip Fireman, M.D.
(Allergy/Immunology)
Professor & Director
Department of Pediatrics
Children's Hospital of Pittsburgh
One Children's Place
3705 Fifth Avenue at DeSoto
Pittsburgh, PA 15213

Ralph F. Naunton, M.D., Director
Communications Sciences & Disorders
National Institutes of Health

Consulting Editors
Guy A. Settipane, M.D.
Clinical Professor of Medicine
Brown University
Rhode Island Hospital

John T. Connell, M.D.
575 Jones Road
Englewood, NJ 07631

Michael S. Benninger, M.D., Chairman
Dept. of Otolaryngology, Henry Ford Hospital
Detroit, MI

Abstract Editors

Paul V. Williams, M.D., Clinical Professor
Department of Pediatrics and Environmental Medicine
University of Washington
Mount Vernon, WA

Editorial Board

Otolaryngology

Ronald Amedee, M.D.
Associate Professor
Tulane University Medical Center
Shunkichi Baba, M.D., Professor
Nagoya City University Medical School
Andrew Blitzer, M.D., Professor
College of Physicians & Surgeons of
Columbia University
William E. Bolger, M.D.
Assistant Professor of Surgery
Uniformed Services University of
the Health Sciences
Karen H. Calhoun, M.D.
Associate Professor & Vice Chair
University of Texas Medical Branch
at Galveston
Charles W. Gross, M.D.
Professor
University of Virginia Health
Sciences Center
Eugene B. Kern, M.D., Professor
Mayo Clinic
Charles F. Koopmann, Jr., M.D.
Professor
University of Michigan Medical Center
Frederick A. Kuhn, M.D.
Associate Professor
Medical College of Georgia
Mary D. Lekas, M.D.
Professor and Chairman
Brown University
Donald W. Leopold, M.D.
Associate Professor
Johns Hopkins University
Frank E. Lucente, M.D.
Professor & Chairman
Long Island College Hospital

Valerie J. Lund, M.S.
University College London
Rodney P. Lusk, M.D.
Associate Professor
St. Louis Children's Hospital
Richard L. Mabry, M.D.
Professor
University of Texas
Southwestern Medical Center
Ian S. Mackay, F.R.C.S.
Consultant, Otolaryngologist
Brompton and Charing Cross
Hospitals, London, England
Robert M. Naclerio, M.D.
Professor and Chair
University of Chicago
Toshio Ohnishi, M.D.
St. Luke's International Hospital, Tokyo
Gregory S. Weinstein, M.D.
Assistant Professor
University of Pennsylvania
Ernest A. Weymuller, Jr., M.D.
Professor
University of Washington
David M. Yousem, M.D.
Associate Professor
University of Pennsylvania
Allergy/Immunology
Jean Bousquet, M.D.
Associate Professor
University of Montpellier
Howard M. Druce, M.D.
Assistant Professor
New Jersey Medical School
John W. Georgitis, M.D.
Associate Professor
Bowman-Gray School of Medicine

Herbert C. Mansmann, Jr., M.D.
Associate Professor
Jefferson Medical College
Kenneth P. Mathews, M.D.
Professor Emeritus
Scripps Clinic
Eli O. Meltzer, M.D.
Clinical Professor
University of California
San Diego
Minoru Okuda, M.D.
Professor
Nippon Medical School
John C. Selner, M.D.
Clinical Professor
University of Colorado Health
Science Center
David P. Skoner, M.D.
Associate Professor
Children's Hospital of Pittsburgh
Raymond Slavin, M.D.
Professor of Medicine
University of Colorado
Health Science Center
William R. Solomon, M.D.
Professor of Medicine
University of Michigan
Medical School
Alkis Togias, M.D.
Assistant Professor
Johns Hopkins University
Martha White, M.D.
Director Allergy Research
Institute for Asthma & Allergy
Washington (D.C.) Hospital Center

The American Journal of Rhinology (ISSN 1050-6586) is owned and published bimonthly by OceanSide Publications, Inc., 95 Pitman Street, Providence, R.I. 02906. Single copies: \$15.00 (add \$5.00 for outside USA address); Subscriptions: \$85.00 per year, Institution price \$115.00 (outside USA add \$30.00). Copyright © 1996, OceanSide Publications (401-331-2510; FAX 401-331-5138). Printed in the U.S.A. **Publishing Staff:** Cynthia Burke, Carole Fico, Virginia Loiselle.

Spectrum of Seasonal Allergic Rhinitis Symptom Relief with Topical Corticoid and Oral Antihistamine Given Singly or in Combination

Carter D. Brooks, M.D., Steven F. Francom, Ph.D., Bruce G. Peel, B.S.,
Brenda L. Chene, R.N., and Karen A. Klott, R.N.

ABSTRACT

Sixty ragweed-sensitive volunteers participated in a 2-week study that compared symptom profiles during treatment with antihistamine (loratadine, LOR) alone, topical corticoid (beclomethasone, BEC) alone, or the two drugs combined. For 5 days commencing shortly after the beginning of the ragweed bloom, patients took no treatment while we collected baseline data. They were then randomized to one of the three treatments, receiving that treatment for the balance of the 2-week study term. Twice each day they recorded the severity of congestion, eye symptoms, running and blowing, itching, and sneezing. At the end of the study they provided an estimate of overall symptom relief, which favored combined treatment (vs LOR $P = 0.001$, vs BEC $P = 0.042$). To gain an estimate of disease severity and treatment effectiveness over time, and to smooth out day-to-day variation, we divided symptom diary reports into three segments (days 2-4, 5-7, and 8-10) for

analysis. Combined treatment controlled symptoms better than antihistamine alone in nearly all study segments. Corticoid alone or combined with antihistamine provided similar control of congestion, running and blowing, and eye complaints. Combination therapy controlled itching and sneezing better, especially through the study segments 1 and 2. Patient preference for combined treatment seems to relate to control of itching and sneezing and rapid onset of effect. (American Journal of Rhinology 10, 193-199, 1996)

In several previous studies we have examined profiles of individual symptoms in allergic rhinitis and the selective effects of various treatments on these profiles. We showed that, compared to placebo, terfenadine suppressed sneeze, itch, and eye symptoms, benefitted congestion marginally, and failed to improve running and blowing. Of these, only control of sneezing appeared quickly after introduction of the drug in midseason.¹ Another study intended to establish minimal effective doses of oral methylprednisolone found, at 6 mg per day, significant suppression of congestion, postnasal drainage, and eye symptoms, but not itching, sneezing, and running.² These findings could be a clinical expression of the reported inability of systemic corticoid to prevent release of mediators from human mast cells.³

It appeared that the symptoms most responsive to antihistamine treatment responded least well to low dose corticoid and vice versa, providing a rational basis for combination of the two drug types for seasonal allergic rhinitis

From The Upjohn Research Clinics and Michigan State University College of Human Medicine, Department of Pediatrics and Human Development

This study was conducted in a clinic wholly supported by The Upjohn Company

Address correspondence and reprint requests to Dr. Carter D. Brooks, Clinical Research Director, 7000 Portage Road, Kalamazoo, MI 49001-0199

treatment. We have carried out preliminary studies documenting additive protection with combined antihistamine/corticoid treatment, and the equivalence of oral and topical corticoid when given as part of the combination.

Others have studied symptom control with combined antihistamine/topical corticoid treatment and have reported variable findings.⁴⁻⁷ Most reported a more modest increment of patient-perceived benefit with combined treatment than our preliminary studies led us to expect.

The goal of the study reported here was to compare profile and severity of individual symptoms, and overall patient perception of benefit during seasonal allergic rhinitis treatment with antihistamine (loratadine, Claritin, Schering-Plough, LOR) alone, topical nasal corticoid (beclomethasone, Vancenase AQ, Schering-Plough, BEC) alone, and the two drugs in combination. The study did not contain a concurrent placebo control group, but all study participants entered the treatment comparison from an untreated baseline observation period.

STUDY DESIGN AND EXECUTION

Subject Selection

Sixty subjects enrolled in and completed the study. Each treatment group contained 20 people; sex distribution in the LOR group was 10M/10F, whereas the BEC and the LOR/BEC groups both had 7M/13F. The three treatment groups were roughly comparable in age, height, and weight. All had reliable histories of seasonal rhinitis compatible with ragweed seasonal allergic rhinitis and strongly positive ragweed skin (prick) tests. Many had participated in previous studies and had provided records of the severity of their seasonal symptoms. None had evidence of significant complicating disease on history, physical examination, or screening laboratory testing; women had negative pregnancy tests on entry and again in mid-study. All alleged that they understood the design, demands, and risks of the study and signed their consent to participate. The Bronson

Hospital Human Use Committee reviewed and approved the study design and documents.

Treatment Schedule

In this community, ragweed typically begins to bloom around August 15. Subjects came under study observation on 18 August (Thursday) and were seen each Monday and Thursday through 1 September. From August 18 to 22 they used no treatment; this provided baseline information documenting seasonal allergic rhinitis severity at the beginning of the observation period. After 22 August they used their randomly assigned therapy, remaining on the same treatment through 1 September. At all visits we reviewed and verified hay fever symptom severity diaries, checked apparent study drug consumption, and inquired for possible treatment side effects or other medical events.

Table I shows the pollen counts obtained during the study confirming the appearance of reasonable levels by mid-August. (James L. McDonald, M.D., provided aeroallergen counts obtained from a roto-bar sampler located at an elevated urban site about one mile from the clinic where we ran the study.) Absolute counts never exceeded 169 grains per cubic meter, relatively low compared with prior years' experiences. However, they seemed to provide an adequate allergic stimulus, both in study subjects and nonstudy patients under our care.

Experimental Drug Treatment

We randomly allocated volunteers to three drug treatment groups consisting of:

1. Loratadine (Claritin, Schering-Plough) (LOR) 10 mg once a day, plus a placebo spray twice a day.
2. Beclomethasone (Vancenase AQ, Schering-Plough) (BEC) two sprays (about 84 mcg) each side of the nose twice a day, plus placebo LOR.
3. BEC twice a day plus LOR once daily.

During the treatment comparison, subjects took no other treatment that might affect their hay fever.

TABLE I

Ragweed Pollen Grain Count in Particles Per CU Meter. Counts Made Using A Roto-bar Sampler Running Intermittently on a Downtown Rooftop

Study Segment	Date	Ragweed Count	Study Segment	Date	Ragweed Count
	August 12	1	1	August 23	83
	August 13	6	1	August 24	162
	August 14	19	1	August 25	169
	August 15	14	2	August 26	95
	August 16	16	2	August 27	144
	August 17	40	2	August 28	144
	August 18	71	3	August 29	116
Baseline	August 19	27	3	August 30	76
Baseline	August 20	14	3	August 31	67
Baseline	August 21	59		September 1	45
	August 22	23		September 2	19

Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.