

The Canadian Journal of Neurological Sciences

Le Journal Canadien des Sciences Neurologiques



SPECIAL FEATURES

Presidential Address: The Impact of Head Trauma on Society	Leslie Ivan	417
Special Feature: Genetic Linkage of the Huntington's Disease Gene to a DNA Marker	James F. Gusella	421
Review Article: Saccadic Intrusions and Oscillations	James A. Sharpe and William A. Fletcher	426

ORIGINAL ARTICLES

The University of Toronto Head Injury Treatment Study: A Prospective, Randomized Comparison of Pentobarbital and Mannitol	Michael L. Schwartz, Charles H. Tator, David W. Rowed, S. Ross Reid, Kotoo Meguro and David F. Andrews	434
Partially Reversible Cerebral Atrophy and Functional Improvement in Recently Abstinent Alcoholics	P.L. Carlen, D.A. Wilkinson, G. Wortzman and R. Holgate	441
Pharmacological Modification of Blood-Brain Barrier Permeability Following a Cold Lesion ..	Jennifer J. Raymond, David M. Robertson, Henry B. Dinsdale and Sukriti Nag	447
Bromocriptine in the Management of End of Dose Deterioration in Parkinson's Disease	J.D. Grimes, D.B. King, O.S. Kofman, P. Molina-Negro, A.F. Wilson and S. Bouchard	452
Free Valproic Acid: Steady-State Pharmacokinetics in Patients with Intractable Epilepsy ..	N. Otten, K. Hall, J. Irvine-Meek, M. Leroux, D. Budnik and S. Seshla	457
Third Ventricle Choroid Plexus Carcinoma	R.W. Broad and P.B.R. Allan	461
Aneurysmal Bone Cyst of the Skull	N.O. Ameli, K. Abbassioun, A. Azod and H. Saleh	466
Visual Loss Secondary to a Giant Aneurysm in a Patient with Tuberculous Sclerosis	Mark Guttman, S. Mark Tanen and Colin D. Lambert	472
Astrocytoma Following Scalp Radiotherapy in Infancy	Douglas W. Zochodne, J. Gregory Cairncross, Felix P. Arce, John C.F. MacDonald, Warren T. Blume, John P. Girvin and John C.E. Kaufmann	475
New Intraventricular Catheter for Volume Pressure Response Measurement	John Gorecki and Fraser Saunders	479
CONFERENCE REPORT:		
The Torsion Dystonias	Edward G. Harris	481
IN MEMORIAM: James Bert Ryal Cosgrove, M.D., F.R.C.P. (C)		483
BOOK REVIEWS		485
CORRESPONDENCE		489
CALENDER OF EVENTS		491
XX Canadian Congress of Neurological Sciences — Call for Abstracts		493
Index to Volume 11 — 1984		497

XX Canadian Congress of
Neurological Sciences
Montréal, Québec

June 25 - 28, 1985

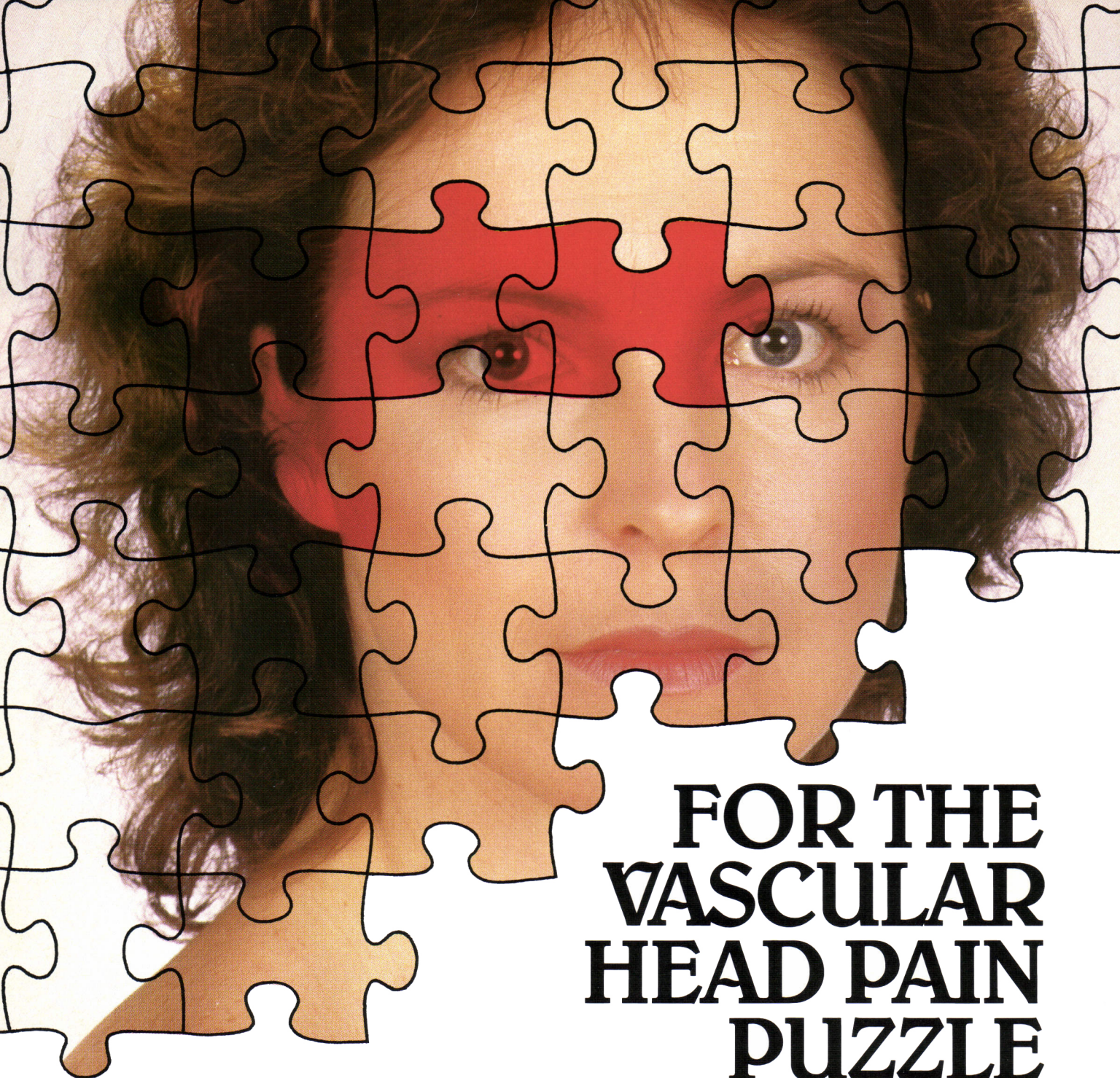
Call for Abstracts Page 493

The Official Journal of

The Canadian Neurological Society
The Canadian Neurosurgical Society
The Canadian Society of Clinical Neurophysiologists
The Canadian Association for Child Neurology

Volume 11, No. 4.

November 1984







FOR THE VASCULAR HEAD PAIN PUZZLE

CAFERGOT[®]
To ABORT acute
vascular headache

SANDOMIGRAN[®] DS
PROPHYLAXIS for chronic
recurring vascular headache

SANDOZ[®]


Complete headache therapy
Sandoz Canada Inc., Dorval, Quebec H9R 4P5

Cafergot contains: ergotamine tartrate/cafeine [®]TM
Sandomigran DS contains: pizotyline
Full prescribing information available on request.    

THE CANADIAN JOURNAL OF NEUROLOGICAL SCIENCES LE JOURNAL CANADIEN DES SCIENCES NEUROLOGIQUES

Editor

Robert G. Lee
Calgary

Associate Editor

André Barbeau
Montreal

Founding Editor

Robert T. Ross
Winnipeg

Editorial Board

Albert J. Aguayo
Montreal

Henry J.M. Barnett
London

Paul Bédard
Quebec

Henry B. Dinsdale
Kingston

Guy Geoffroy
Montreal

Alan Hudson
Toronto

Yves Lamarre
Montreal

Bernard Lemieux
Sherbrooke

William J. Logan
Toronto

Morton Low
Vancouver

Thomas P. Morley
Toronto

Thomas J. Murray
Halifax

Donald Paty
Vancouver

Sidney J. Peerless
London

Terry Picton
Ottawa

Jean Reiher
Sherbrooke

Leo P. Renaud
Montreal

Barry Rewcastle
Calgary

Harvey B. Sarnat
Calgary

Matthew W. Spence
Halifax

William G. Tatton
Toronto

Bryce Weir
Edmonton

Book Review Editor

T. Peter Seland
Calgary

Editorial Assistant

Sally Gregg
Calgary

THE EDITORIAL BOARD wishes to publish original work in the basic and clinical neurosciences on the understanding that it has not been and will not be published elsewhere. Review articles on timely subjects will be accepted. Manuscripts must be in triplicate including illustrations. One of the copies must be the original, ribbon copy. Manuscripts should be typed double spaced, on white paper.

Papers will be accepted in French or English. All papers should be accompanied by a short résumé in both languages. The résumé translation will be done by the editorial board if requested.

Papers should be identified only by the full name of the author, or authors, and the name of the place in which the work was done.

ILLUSTRATIONS: Photographs should be unmounted on glossy paper and show magnification scale. They should be marked on the back with figure number, title of paper and name of author.

Diagrams should be in India ink and large enough to be informative after reduction.

All illustrations should be referred to as figures, numbered consecutively, not included in the body of the text and all captions should be typed on a separate piece of paper.

Colored illustrations cannot usually be accepted unless the author is prepared to assist with the cost of reproduction.

REFERENCES to authors outside the context of the sentence should read (Name, Year). i.e. "However, a recent study (Bird and Iverson, 1975) showed a decreased, etc." Authors mentioned within the context of the sentence should read Name (Year), "i.e. . . . twenty years since Ecker and Reimenshender (1951) demonstrated, etc." References should be typed in alphabetical order on a separate sheet and include author's name, initials, year, title, publication, volume first and last page, i.e. Isacson, P. (1967). Myx-oviruses and autoimmunity. *Progress in Allergy*, 10, 256-292. Abbreviations should be the same as those used in *Cumulated Index Medicus*.

Textbook references should include name of text, author's name, page number, publisher and city.

REPRINTS: Fifty reprints will be supplied free if ordered when the galley proofs are returned. More may be ordered at a nominal charge. Corrections and changes in the galley proofs, apart from printer's errors may be charged to the author.

This journal is indexed by **Index Medicus**, **Excerpta Medica** and **Current Contents — Clinical Practice and Life Science**.

SUBSCRIPTIONS: This journal is issued four times a year. The annual rate is \$40.00 for Canada and the U.S.A. \$44.00 elsewhere. Internes, Residents, Pre- and Post-Doctoral Students, \$20.00 per annum. Single copies \$12.00 each.

ADVERTISING: Enquiries regarding advertising space and rates should be directed to LEX LTD. 431 Alden Road, Markham, Ontario L3R 3L4. Telephone — (416) 477-2030.

Suite 390, 3333 Cavendish Blvd., Montreal, Quebec H4B 2M5 — (514) 487-4412-4.


All communications, manuscripts, subscriptions, etc., should be sent to the Editor, Canadian Journal of Neurological Sciences, Rm. 1443, Faculty of Medicine, University of Calgary, 3330 Hospital Drive N.W., Calgary, Alberta, Canada T2N 4N1. Telephone (403) 283-4072.

COPYRIGHT © 1984 by THE CANADIAN JOURNAL OF NEUROLOGICAL SCIENCES INC. No part of this journal may be reproduced in any form without the prior permission of The Canadian Journal of Neurological Sciences. ISSN 0317-1671.

Published in conjunction with the University of Calgary Press.

Printed by McAra Printing Limited, 105, 2507 - 12th Street N.E., Calgary, Alberta T2E 7L5

Mailed under second class registration number 3307. Postage paid at Calgary, Alberta.



**FOR
THE
HEAD
PAIN
PUZZLE...**

» FIORINAL[®]

**Two stat
for TENSION
headache**

SANDOZ[®]



Complete headache therapy
Sandoz Canada Inc., Dorval, Quebec H9R 4P5

Fiorinal contains: ASA/caffeine/butalbital
Full prescribing information available on
request.



PUBLICATIONS COMMITTEE

John Wherrett
Toronto

Andrew Eisen
Vancouver

Terry Myles
Calgary

John Tibbles
Halifax

CANADIAN NEUROLOGICAL SOCIETY

President Robert F. Nelson
Past-President Thomas J. Murray
Vice-President Thomas P. Seland
Secretary-Treasurer Garth M. Bray
1650 Cedar Avenue,
Montreal, P.Q.
H3G 1A4

Council:
Monique Lefebvre-d'Amour
Jean Pierre Bouchard
William McCormick
Donald Calne
Ali Rajput
Thomas Feasby

CANADIAN NEUROSURGICAL SOCIETY

President Stanley Schatz
Past-President Leslie Ivan
President-Elect Charles Tator
Secretary-Treasurer Alain Godon
12361 Notre-Dame-des Anges Street
Montreal, Quebec
H4J 2C3

Council:
Jacques Boucher
Mohamed Khan
Hart Schutz
Barry Purves
Brien Benoit
Renn Holness

CANADIAN SOCIETY OF CLINICAL NEUROPHYSIOLOGISTS

President Terence Picton
Past-President Warren Blume
Secretary-Treasurer R. Gordon Blair
25 Leonard Avenue,
Suite 309,
Toronto, Ontario M5T 2R2

Council:
Werner Becker
William Brown
Thomas Feasby
Donald McLean

CANADIAN ASSOCIATION FOR CHILD NEUROLOGY

President Frederick Andermann
Past-President Rosalind Curtis
Vice-President R. Haslam
Secretary-Treasurer Daune L. McGregor
Hospital for Sick Children
555 University Ave.
Toronto M5G 1X8

Council:
Peter Humphreys
J.U. Crichton
A. Larbrisseau

SANDOZ®



WATCH
THIS
SPACE

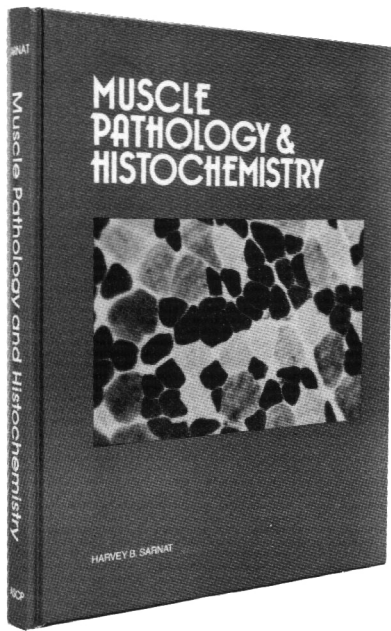
In the next issue of
the Canadian Journal of Neurological Sciences
New information from Sandoz Research regarding

PARLODEL® 
(bromocriptine mesylate)

recently approved as adjunctive medication
in Parkinson's Disease.

A result of original research by Sandoz.





MUSCLE PATHOLOGY & HISTOCHEMISTRY

HARVEY B. SARNAT, MD

Associate Professor of Pediatrics,
Pathology & Clinical Neurosciences
University of Calgary Faculty of Medicine
Calgary, Alberta

- A full color atlas with 207 color photomicrographs
- Methodology on tissue preparation for histochemical & histologic studies
- Detailed discussions of histochemical stains as interpretive aids in muscle biopsies
- Over 1,000 references

This text atlas provides you with interpretive clinical correlations to increase diagnostic skills in light microscopy of muscle biopsy. This in-depth reference stresses the difficult diagnostic problems of the muscular dystrophies, inflammatory, congenital and metabolic myopathies, and the recognition of neurogenic disease of muscle. It discusses the morphologic changes in striated muscle that are associated with neurogenic and myopathic processes, developmental muscle disorders, and the value of histochemical stains in the interpretation of muscle biopsies. This textbook atlas also permits the identification of distinguishing features of various myopathies at the light microscopic level. It is an important procedural and interpretive reference for every laboratory.

YES, I want to order the text atlas *Muscle Pathology and Histochemistry* by Harvey B. Sarnat.

TEXT
Cat #AD/16-1-034-00
\$75.00

TEXT & 216 SLIDES
Cat. #AD/15-1-034-00
\$175.00

Total _____

Name _____

Shipping & Handling Add 5% _____

Address _____

IL Residents add 6% tax or
note sales tax exemption _____

TOTAL _____

City _____ State _____ Zip _____

Day Phone () _____

ASCP Member No. _____

Bill me P.O. No. _____
 Check enclosed. Make payable to ASCP
Charge to: VISA MasterCard

Card No. _____

Inter. No. _____ Exp. Date _____

Signature _____

**PHONE ORDERS; call
TOLL FREE:
800-621-4142
(In Illinois, call: 312-738-4890)**

**MAIL TO: ASCP
P.O. Box 12075
Chicago, IL 60612**

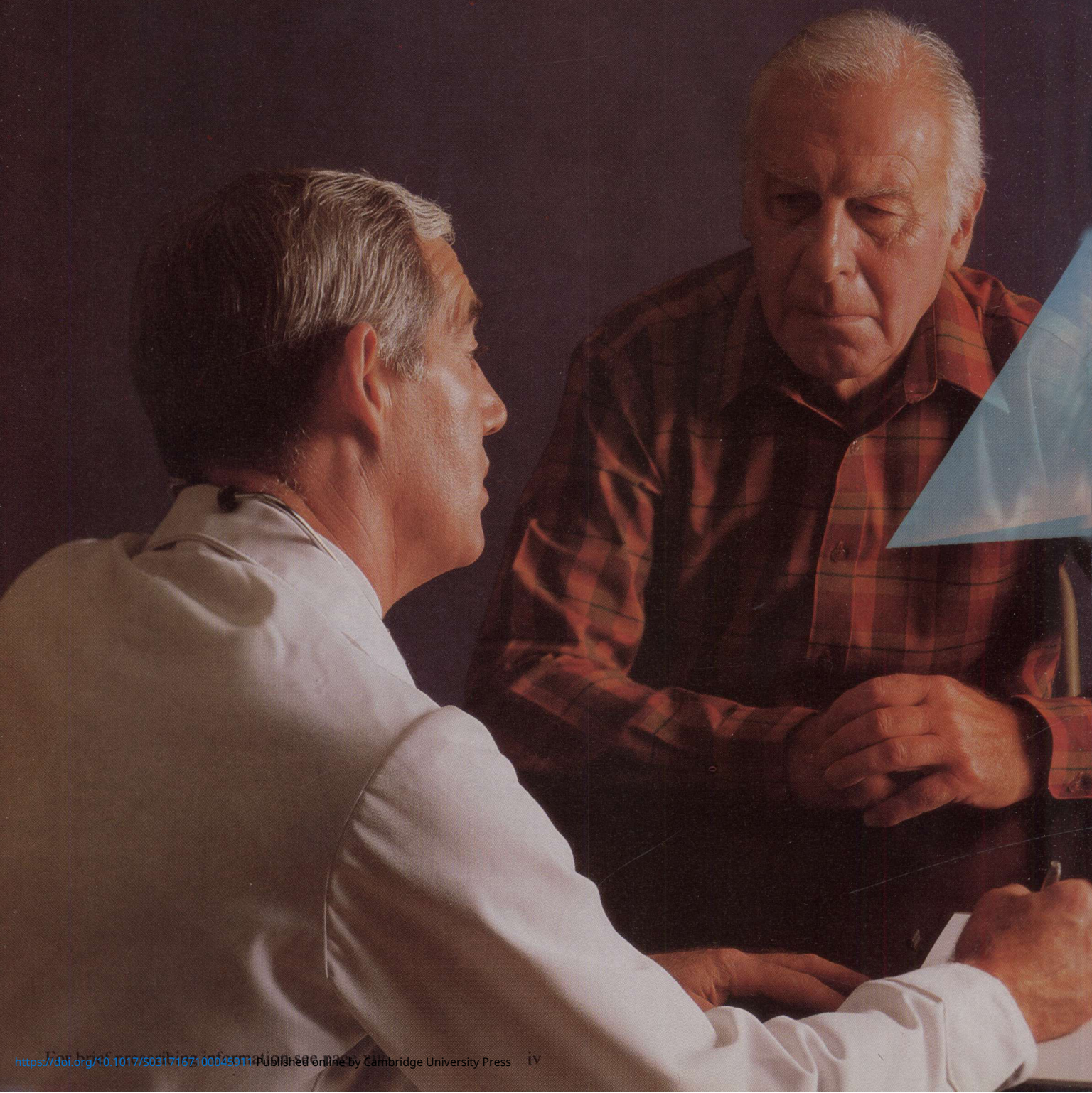
Contact ASCP for quantity discounts.
Please allow 4 to 6 weeks for delivery.
Prices subject to change without notice.
Prices slightly higher outside U.S.



**A·S·C·P
PRESS**

Combat the Threat of Thrombosis ...

Choose Asasantine[®] for Your Patients with Coronary Artery Disease



"Increased platelet activity may have an important role in inducing intimal damage and vasospasm"¹

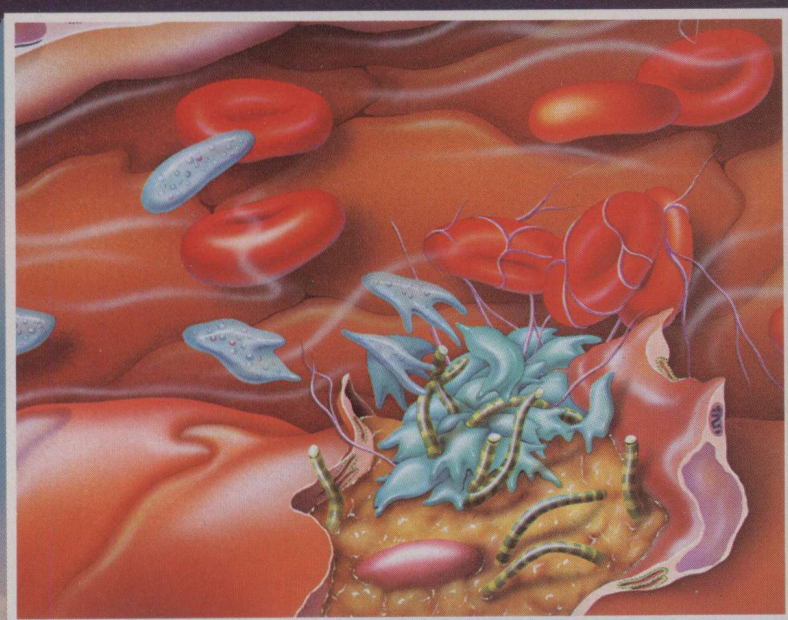
"Whatever the precise sequence of events, formation of platelet aggregates in the coronary vessels could limit blood flow and either cause the ischemic event or result in deterioration of already compromised blood flow to the myocardium."²

Asasantine[®] Normalizes Platelet Reactivity

Asasantine[®] capsules contain 75 mg Persantine[®] (dipyridamole) plus 330 mg ASA. Clinical trials demonstrate the effectiveness of this combination in reducing platelet adhesion and aggregation, and subsequent thrombus formation. Consequently, Asasantine[®], is an important choice of therapy in preventing recurrent myocardial infarction.

Asasantine[®] Reduces Coronary Incidence

- 1 capsule T.I.D.
- Minimal side effects
- No cardiovascular-related contraindications



Asasantine[®]



**Boehringer
Ingelheim**

PAAB
CCPP

Boehringer Ingelheim (Canada) Ltd. / Ltée
977 Century Drive, Burlington, Ontario L7L 5J8

Tegretol® 200 mg

(carbamazepine)

For Symptomatic Relief of Trigeminal Neuralgia Anticonvulsant**Action:**

TEGRETOL (carbamazepine) has anticonvulsant properties which have been found useful in the treatment of psychomotor and other partial epilepsies, when administered in conjunction with other anticonvulsant drugs to prevent the possible generalization of the epileptic discharge. A mild psychotropic effect has been observed in some patients, which seems related to the effect of the carbamazepine in psychomotor or temporal lobe epilepsy. TEGRETOL relieves or diminishes the pain associated with trigeminal neuralgia often within 24 to 48 hours.

Indications and Clinical Use**A. Trigeminal Neuralgia:**

For the symptomatic relief of pain of trigeminal neuralgia only during periods of exacerbation of true or primary trigeminal neuralgia (tic douloureux). Do not use preventively during periods of remission. In some patients, TEGRETOL has relieved glossopharyngeal neuralgia. For patients who fail to respond to TEGRETOL, or who are sensitive to the drug, recourse to other accepted measures must be considered.

TEGRETOL is not a simple analgesic and should not be used to relieve trivial facial pains or headaches.

B. TEGRETOL has been found useful:

- 1) in the management of psychomotor (temporal lobe) epilepsy, and,
- 2) as an adjunct, in some patients with secondary or partial epilepsy with complex symptomatology or secondarily generalized seizures, when administered in combination with other antiepileptic medication.
- 3) as an alternative medication in patients with generalized tonic-clonic seizures who are experiencing marked side effects or fail to respond to other anticonvulsant drugs.

TEGRETOL is ineffective in controlling petit mal, minor motor, myoclonic and predominantly unilateral seizures, and does not prevent the generalization of epileptic discharge.

Warnings

Although reported infrequently, serious adverse effects have been observed during the use of TEGRETOL. Agranulocytosis and aplastic anemia have occurred in a few instances with a fatal outcome. Leucopenia, thrombocytopenia and hepatocellular and cholestatic jaundice have also been reported. It is, therefore, important that TEGRETOL should be used carefully and close clinical and frequent laboratory supervision should be maintained throughout treatment in order to detect as early as possible signs and symptoms of a possible blood dyscrasia. Long-term toxicity studies in rats indicated a potential carcinogenic risk. Therefore, the possible risk of drug use must be weighed against the potential benefits before prescribing carbamazepine to individual patients.

Contraindications

Hepatic disease, serious blood disorder, less than 14 days either before or after monoamine oxidase inhibitor (then the dosage of TEGRETOL should be low initially, and increased very gradually), atrioventricular heart block, hypersensitivity to tricyclic compounds, lactation, first trimester of pregnancy.

Usage in Pregnancy

As safety has not been established, TEGRETOL should not be given to women of childbearing potential unless, in the opinion of the physician, the expected benefits to the patient outweigh the possible risk to the foetus.

Precautions

Monitoring of Haematological and Other Adverse Reactions: Complete blood studies, including platelet counts, and evaluation of hepatic and renal function and urinalysis should be carried out before treatment is instituted and frequent clinical and laboratory supervision should be maintained throughout treatment. If any signs or symptoms or abnormal laboratory findings suggestive of blood dyscrasia or liver disorder occur, TEGRETOL should be immediately discontinued.

Urinary Retention and Increased Intraocular Pressure:

Caution is advised in patients with increased intraocular pressure or urinary retention due to the drug's anticholinergic action.

Occurrence of Behavioural Disorders:

TEGRETOL may activate a latent psychosis, or, in elderly patients, produce agitation or confusion. Caution is advised in alcoholics.

Use in Patients with Cardiovascular Disorders:

Caution is advised in patients with a history of coronary artery disease, organic heart disease, or congestive failure. An E.K.G. should be performed if a defective conductive system is suspected before administering TEGRETOL, in order to exclude patients with atrioventricular block.

Use in Patients taking Oral Contraceptives:

Women under treatment with TEGRETOL and oral contraceptives, should be advised to use some alternative, non-hormonal method of contraception as the reliability of oral contraceptives may be adversely affected.

Driving and Operating Hazardous Machinery:

Warn patients about the possible hazards of operating machinery or driving automobiles as dizziness and drowsiness are possible side effects of TEGRETOL.

Adverse Reactions

Haematological reactions: Transitory leucopenia, eosinophilia, leucocytosis, thrombocytopenic purpura, agranulocytosis, macrocytic anemia and aplastic anemia. In a few instances, deaths have occurred.

Hepatic Disturbances: Abnormalities in liver function tests, cholestatic or hepatocellular jaundice.

Dermatological Reactions: Skin sensitivity reactions and rashes, erythematous rashes, pruritic eruptions, urticaria, photosensitivity, pigmentary changes, neurodermatitis and in rare cases Stevens-Johnson syndrome, exfoliative dermatitis, alopecia, diaphoresis, erythema multiforme, erythema nodosum, and aggravation of disseminated lupus erythematosus.

Neurological Reactions: Vertigo, dizziness, somnolence, disturbances of coordination, confusion, headache, fatigue, blurred vision, transient diplopia and oculomotor disturbances, speech disturbances, abnormal involuntary movements, increase in motor seizures, peripheral neuritis, paresthesia, depression with agitation, talkativeness, nystagmus, tinnitus, paralysis and other symptoms of cerebral arterial insufficiency.

Cardiovascular Systems: Recurrence of thrombophlebitis, congestive heart failure, aggravation of hypertension, Stokes-Adams in patients with AV block, hypotension, syncope and collapse, edema, aggravation of coronary artery disease. Some of these complications (including myocardial infarction and arrhythmia) have been associated with other tricyclic compounds.

Genitourinary Reactions: Urinary frequency, acute urinary retention, oliguria with elevated blood pressure, impotence, elevation of BUN, albuminuria, and glycosuria.

Digestive Tract: Nausea, vomiting, gastric or abdominal discomfort, diarrhoea, anorexia, dryness of the mouth and throat, glossitis and stomatitis.

Eyes: There is no conclusive evidence that TEGRETOL produces pathological changes in the cornea, lens or retina. However, it should be recognized that many phenothiazines and related drugs have been shown to cause eye changes. By analogy, periodic eye examinations, including slitlamp funduscopy and tonometry, are recommended.

Other Reactions: Fever and chills, lymphadenopathy, aching joints and muscles, leg cramps and conjunctivitis.

Symptoms and Treatment of Overdosage

Symptoms: Dizziness, ataxia, drowsiness, stupor, nausea, vomiting, restlessness, agitation, disorientation; tremor, involuntary movements, opisthotonos, abnormal reflexes (slowed or hyperactive); mydriasis, nystagmus; flushing, cyanosis, urinary retention, hypotension, hypertension, coma. The EEG may show dysrhythmias. The laboratory findings have included leukocytosis, reduced leukocyte count, glycosuria and acetonaemia.

Treatment: No known specific antidote. Induce emesis. Perform gastric lavage. Watch vital signs and administer symptomatic treatment as required. Hyperirritability may be controlled by the administration of parenteral barbiturates. Barbiturates should not be used if monoamine oxidase inhibitors have also been taken by the patient, either in overdosage or in recent therapy (within two weeks). Barbiturates may induce respiratory depression, particularly in children, therefore, have equipment available for artificial ventilation and resuscitation. Paraldehyde may be used to counteract muscular hypertonus without producing respiratory depression.

Treat shock (circulatory collapse) with supportive measures, including intravenous fluids, oxygen, and corticosteroids. Electrocardiogram should be monitored, particularly in children, to detect any cardiac arrhythmias or conduction defects.

Dosage and Administration

Use in Epilepsy (see Indications): A low initial daily dosage with a gradual increase in dosage is advised. Dosage should be adjusted to the needs of the individual patient. **Adults and Children over 12 years of age:** Initially: 100 to 200 mg once or twice a day. The initial dosage is progressively increased, until the best response is obtained, up to 600 mg daily. **Usual Daily Dosage:** 600 mg, however up to 800 to 1000 mg have been used for short periods. As soon as disappearance of seizures has been obtained and maintained, dosage should be reduced very gradually until a minimum effective dose is reached.

Use in trigeminal neuralgia: Initial daily dosage: 100 mg twice daily may be increased by 200 mg per day until relief of pain is obtained. Usual dosage: 200 to 800 mg daily. Up to 1200 mg daily may be necessary. As soon as relief of pain has been obtained and maintained, progressive reduction in dosage should be attempted until a minimum effective dosage is reached. Because trigeminal neuralgia is characterized by periods of remission, attempts should be made to reduce or discontinue the use of TEGRETOL at intervals of not more than 3 months, depending upon the individual clinical course.

Prophylactic use in trigeminal neuralgia is not recommended. Administer in two or three divided doses daily, with meals whenever possible.

Dosage Forms

TEGRETOL 200 mg
Each white, round, flat, bevelled-edged, double-scored tablet is imprinted with the GEIGY monogram.

Availability

Bottles of 100 and 500 tablets. Protect from heat and humidity. Full information available on request.

References

- 1 Troupin, A.S.: The Choice of Anticonvulsants, Proceedings of the 25th Western Institute on Epilepsy, March 26, 1975, Las Vegas, Nevada.
- 2 Antiepileptic Drugs, Second Edition, Woodbury, Penry, Pippenger, Raven Press, p. 513.
- 3 Thompson, P.J. and Trimble, M.R.: Anticonvulsant Drugs and Cognitive Functions, *Epilepsia*, 23: 531-544, 1982.

GeigyMississauga, Ontario
L5N 2W5

G-3161

Neuromatic® 2000

- a proven success

now
C and M
types

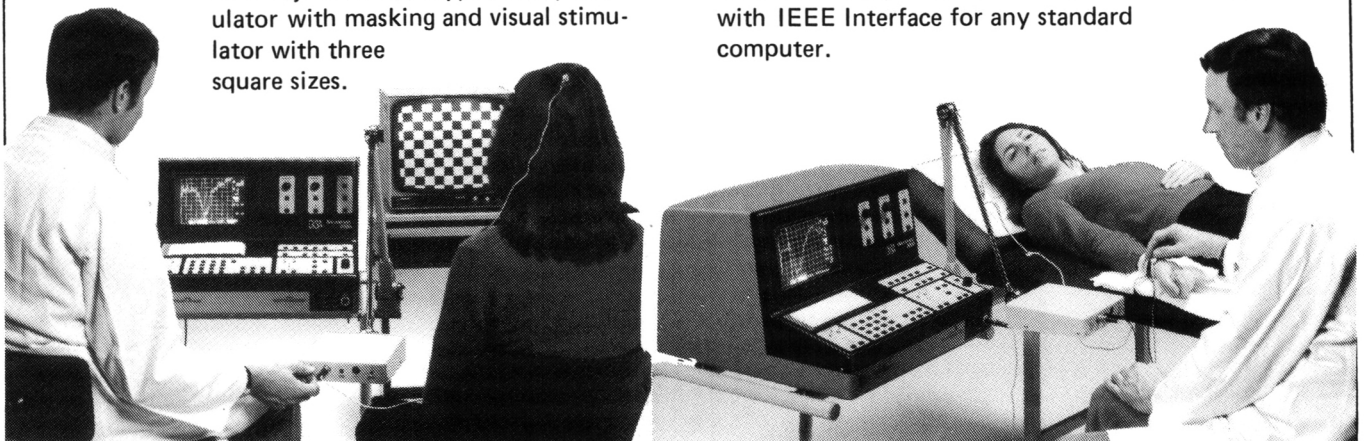


Neuromatic® 2000 C — the Combined Neuro-Myograph for Clinical Electromyography and Evoked Potentials

The Neuromatic® 2000 C has powerful averagers with rejection facility, auditory stimulator with masking and visual stimulator with three square sizes.

Neuromatic® 2000 M — the Myograph for Clinical Electromyography

The Neuromatic® 2000 M has superior amplifiers and powerful averagers with rejection facility. Both the C-type and the M-type can be supplied with IEEE Interface for any standard computer.



A close-up photograph of a person's arm and hand. The person is wearing a dark, sleeveless top. Their hand is holding a white, textured strap, possibly a medical device or a piece of clothing. On their left wrist, a silver medical ID bracelet is visible, featuring a red logo and the text "EPILEPSY" and "Tegretol". The bracelet is circled in white. The background is a bright, outdoor setting with grass and a clear sky.

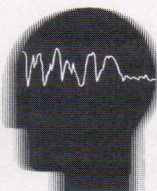
with
Tegretol[®]

...this may well be
the only sign of
epilepsy

Tegretol® provides excellent seizure control without the penalty of excessive sedation; without hyperplasia of gingival mucosa, without hypertrichosis; *and with minimal impairment of cognitive function.*^{1, 2, 3}

So give your epileptic patients a better chance at a more normal lifestyle. With Tegretol right at the start.

Tegretol®



Because there's no substitute for experience.



Geigy

Mississauga, Ontario
LSN 2W5

PAAB
CCPP
G-3161

SANDOZ®



COMING
SOON

In the next issue of
the Canadian Journal of Neurological Sciences
New information from Sandoz Research regarding

PARLODEL[®]
(bromocriptine mesylate)

recently approved as adjunctive medication
in Parkinson's Disease.

A result of original research by Sandoz.

