THE CANADIAN JOURNAL OF Neurological Sciences LE JOURNAL CANADIEN DES Sciences Neurologiques

AN INTERNATIONAL JOURNAL / UN JOURNAL INTERNATIONAL

1 Message from the Editor

REVIEW ARTICLES

- 3 Mechanisms of Glioma Invasion: Role of Matrix-Metalloproteinases JH Uhm, NP Dooley, JG Villemure and VW Yong
- 16 Migraine and Oral Contraceptives *WJ Becker*

ORIGINAL ARTICLES

- 22 Regional HmPAO SPECT and CT Measurements in the Diagnosis of Alzheimer's Disease A Mattman, H Feldman, B Forester, D Li, I Szasz, BL Beattie and M Schulzer
- 29 Frontal Behavioral Inventory: Diagnostic Criteria for Frontal Lobe Dementia Andrew Kertesz, Wilda Davidson and Hannah Fox
- 37 Alfentanil Medicated Activation of Epileptiform Activity in the Electrocorticogram During Resection of Epileptogenic Foci

Daniel L Keene, David Roberts, William M Splinter, Michael Higgins and Enrique Ventureyra

- 40 Early Seizures after Severe Closed Head Injury Shih-Tseng Lee, Tai-Ngar Lui, Cheuk-Wah Wong, Yi-Shen Yeh, Wen-Ching Tzaan, Tzu-Yung Chen, Shang-Yu Hung and Chieh-Tsai Wu
- 44 Responses to Dynamic Head-and-Body Tilts are Enhanced in Parkinson's Disease Nicole Paquet and Christina WY Hui-Chan
- 53 Responses in Skin Microcirculation to Vestibular Stimulation Before and During Motion Sickness Ognyan I Kolev, Claes Möller, Gert Nilsson and Lita Tibbling
- 58 Difficulty Recalling People's Names CM Fisher
- 62 Basal Ganglia Herniation into Fourth Ventricle Mensura Altumbabic, Marc R Del Bigio and Scott Sutherland
- 64 Marked Hyperprolactinemia Caused by Carotid Aneurysm Susan R Kahn, Richard Leblanc, Abbas F Sadikot and I George Fantus
- 67 Hyperglycemia, Lumbar Plexopathy and Hypokalemic Rhabdomyolysis Complicating Conn's Syndrome Chi-Ping Chow, Christopher J Symonds and Douglas W Zochodne
 - Musical Auditory Hallucinosis from Listeria Rhombencephalitis Andre G Douen and Pierre R Bourque
 - Syringomyelia Developing as Acute Complication of Tuberculous Meningitis Abdu Kader Daif, Saad Al Rajeh, Adesola Ogunniyi, Amer Al Boukai and Abdulrahman Al Tahan
 - Proximal Neuropathy in Colles' Fracture Michael Rubin and Carl W Heise

ABSTRACTS

79 Canadian Association of Neuropathologists Meeting, Halifax, Nova Scotia October 2, 1996

> The official Journal of: The Canadian Neurological Society, The Canadian Neurosurgical Society, The Canadian Society of Clinical Neurophysiologists, The Canadian Association for Child Neurology

70

73

77

With Epival, it can be.

Epival has been proven effective in primary generalized epilepsy,¹⁻³ as well as in partial seizures that secondarily generalize.^{4,5*} Just as importantly, Epival has been associated with little effect on learning and cognition,⁶ and is generally well tolerated in properly screened patients.^{7†}

Because as your epilepsy patients can confirm, there's more to anticonvulsant therapy than seizure control.

THIS SHOULD BE THE ONLY INDICATION THEY HAVE EPILEPSY.



HELPS PUT PATIENTS BACK IN CONTROL.

* For use as sole or adjunctive therapy in the treatment of simple or complex absence seizures, including petit mal and is useful in primary generalized seizures vith tonic-clonic manifestations. Epival may also be used adjunctively in patients with multiple seizure types which include either absence or tonic-clonic seizures. † Monitoring of hepatic function and blood coagulation is advised. Caution is advised in children < 10 years on multiple AEDs.</p>



BAINT-LAURENT, OLEVEC 145 121

© Abbott Laboratories, Limited Product Monograph available on request

THE CANADIAN JOURNAL OF Neurological Sciences

LE JOURNAL CANADIEN DES Sciences Neurologiques

	1	Message from the Editor
REVIEW ARTICLES	3	Mechanisms of Glioma Invasion: Role of Matrix-Metalloproteinases JH Uhm, NP Dooley, JG Villemure and VW Yong
	16	Migraine and Oral Contraceptives WJ Becker
Original Articles	22	Regional HmPAO SPECT and CT Measurements in the Diagnosis of Alzheimer's Disease A Mattman, H Feldman, B Forester, D Li, I Szasz, BL Beattie and M Schulzer
	29	Frontal Behavioral Inventory: Diagnostic Criteria for Frontal Lobe Dementia Andrew Kertesz, Wilda Davidson and Hannah Fox
	37	Alfentanil Medicated Activation of Epileptiform Activity in the Electrocorticogram During Resection of Epileptogenic Foci Daniel L Keene, David Roberts, William M Splinter, Michael Higgins and Enrique Ventureyra
	40	Early Seizures after Severe Closed Head Injury Shih-Tseng Lee, Tai-Ngar Lui, Cheuk-Wah Wong, Yi-Shen Yeh, Wen-Ching Tzaan, Tzu-Yung Chen, Shang-Yu Hung and Chieh-Tsai Wu
	44	Responses to Dynamic Head-and-Body Tilts are Enhanced in Parkinson's Disease Nicole Paquet and Christina WY Hui-Chan
	53	Responses in Skin Microcirculation to Vestibular Stimulation Before and During Motion Sickness Ognyan I Kolev, Claes Möller, Gert Nilsson and Lita Tibbling
	58	Difficulty Recalling People's Names CM Fisher
	62	Basal Ganglia Herniation into Fourth Ventricle Mensura Altumbabic, Marc R Del Bigio and Scott Sutherland
	64	Marked Hyperprolactinemia Caused by Carotid Aneurysm Susan R Kahn, Richard Leblanc, Abbas F Sadikot and I George Fantus
	67	Hyperglycemia, Lumbar Plexopathy and Hypokalemic Rhabdomyolysis Complicating Conn's Syndrome Chi-Ping Chow, Christopher J Symonds and Douglas W Zochodne
	70	Musical Auditory Hallucinosis from Listeria Rhombencephalitis Andre G Douen and Pierre R Bourque
	73	Syringomyelia Developing as Acute Complication of Tuberculous Meningitis Abdu Kader Daif, Saad Al Rajeh, Adesola Ogunniyi, Amer Al Boukai and Abdulrahman Al Tahan
	77	Proximal Neuropathy in Colles' Fracture Michael Rubin and Carl W Heise
Abstracts	79	Canadian Association of Neuropathologists Meeting, Halifax, Nova Scotia October 2, 1996
		Books Received 87
		Book Reviews 87
		Calender of Events 92
INDEX		Information for Authors viii
		Advertisers Index xxxiii

i

the canadian journal of Neurological Sciences

LE JOURNAL CANADIEN DES Sciences Neurologiques

Editor/Rédacteur en chef James A. Sharpe TORONTO, ON

Associate Editors/Rédacteurs associés

Laurence E. Becker TORONTO, ON John P. Girvin LONDON, ON John R. Wherrett TORONTO, ON

Past Editors

Robert G. Lee CALGARY, AB Robert T. Ross WINNIPEG, MB (founding editor)

Editorial Board/Conseil Scientifique

Harold P. Adams IOWA CITY, IA, USA Jack P. Antel MONTREAL, QC Pierre Duquette MONTRÉAL, QC Peter J. Dyck ROCHESTER, MN, USA Andrew A. Eisen VANCOUVER, BC Max J. Findlay EDMONTON, AB Julian T. Hoff ANN ARBOR, MI, USA Renn Holness HALIFAX, NS George Karpati MONTRÉAL, OC Patrick L. McGeer VANCOUVER, BC John H. Noseworthy ROCHESTER, MN, USA C. Warren Olanow NEW YORK, NY, USA William Pryse-Phillips ST. JOHNS, NF Ali H. Rajput SASKATOON, SK James T. Rutka TORONTO, ON Shashi S. Seshia WINNIPEG, MB Alan M. Smith MONTRÉAL, QC Garnette R. Sutherland CALGARY, AB Jean-Guy Villemure MONTRÉAL, QC Douglas W. Zochodne CALGARY, AB

Book Review Editor / Rédacteur de critiques de livres

Warren P. Mason TORONTO, ON

News Editor/Rédacteur (nouvelles) John W. Norris TORONTO, ON

Managing Director/Gérant directrice Sally A. Gregg CALGARY, AB

Publications Committee/Comité de Rédaction

Pierre Langevin STE-FOY, QC Donald Brunet KINGSTON, ON Mark Hamilton CALGARY, AB Andrew Kertesz LONDON, ON

The official journal of: / La Revue officielle de:

The Canadian Neurological Society La Société Canadienne de Neurologie

The Canadian Neurosurgical Society La Société Canadienne de Neurochirurgie

The Canadian Society of Clinical Neurophysiologists La Société Canadienne de Neurophysiologie Clinique

The Canadian Association of Child Neurology L'Association Canadienne de Neurologie Pédiatrique

The permanent secretariat for the four societies and the Canadian Congress of Neurological Sciences is at/ Le secrétariat des quatre associations et du Congrès Canadien des Sciences Neurologiques est situe en permanence à: 810, 906 - 12 Avenue S.W., Calgary, AB Canada T2R 1K7

The Canadian Journal of Neurological Sciences is published quarterly. The annual subscription rate is \$65 for members; \$75 for non-members in Canada; \$85 for USA and elsewhere. Residents, Interns, Pre- and Post-Doctoral Students \$32.50 per annum (members); \$37.50 per annum (non-members). Single copies \$20 each plus postage and handling. All manuscripts and communications should be sent to: Canadian Journal of Neurological Sciences, P.O. Box 4220, Station C, Calgary, AB Canada T2T 5N1. Courier to: 810, 906 - 12th Avenue S.W., Calgary, AB Canada T2R 1K7. Telephone (403) 229-9575; Fax (403) 229-1661. E-mail: cjns@canjneurolsci.org

COPYRIGHT© 1997 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. Mailed under Publications Mail registration number 3307. Postage paid at Calgary, Alberta. This journal is indexed by *Index Medicus, Excerpta Medica and Current Contents — Clinical Practice and Life Sciences. Current Awareness in Biological Sciences.*

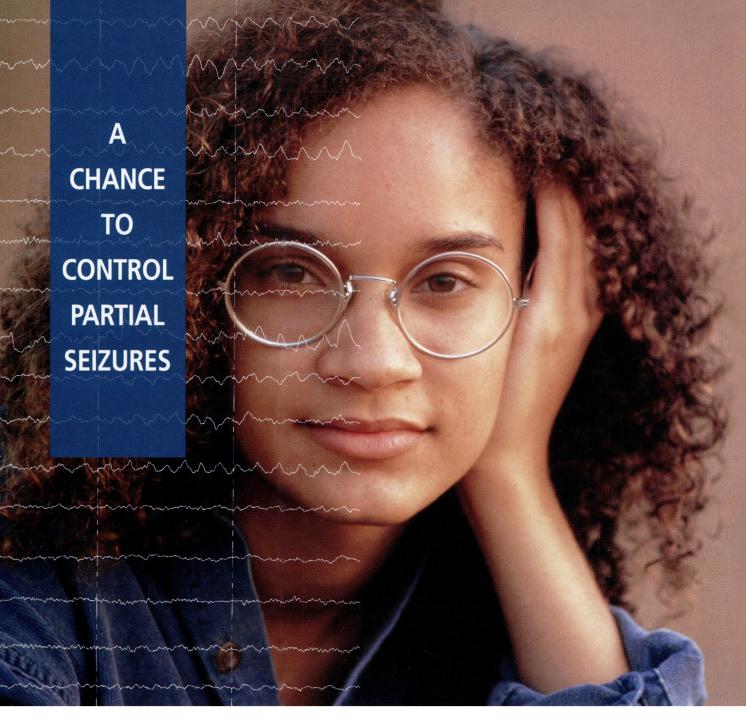
Le Journal Canadien des Sciences Neurologiques est publié trimestriellement. L'abonnement annuel est de 65 \$ pour les membres; 75 \$ pour les non-membres au Canada; 85 \$ pour les Etats Unis et ailleurs. Internes, résidents, fellows pré et post doctoral: 32.50 \$ par année (membres): 37.50 \$ par année (non-membres). Copie simple: 20 \$ plus affranchissement et manutention. Toutes les communications et les manuscrits doivent être adressés à Journal Canadien des Sciences Neurologiques, P.O. Box 4220, Station C, Calgary, AB Canada T2T 5N1. Par courrier: 810, 906 - 12th Avenue S.W., Calgary, AB Canada T2R 1K7. Téléphone (403) 229-9575; Fax (403) 229-1661. E-mail cjns@canjneurolsci.org DROITS D'AUTEUR© 1997: THE CANADIAN JOURNAL OF NEUROLOGICAL SCIENCES INC. Aucune partie de ce Journal ne peut être reproduite, sous quelque forme que ce soit, sans la l'authorisation du Journal Canadien des Sciences Neurologiques. Posté sous permis de poste-publications no 3307. Port payé à Calgary, Alberta. Le Journal est cité et indexé dans Index Medicus, Excerpta Medica et Current Contents - Clinical Practice et Life Sciences, Current Awareness in Biological Sciences.

Advertising representative/Représentant de publicité: Sally Gregg, Canadian Journal of Neurological Sciences 810, 906 - 12 Ave. S.W., Calgary, AB Canada T2R 1K7 Tel (403) 229-9575 Fax (403) 229-1661 E-mail: cjns@canjneurolsci.org

Printer/Imprimeur:

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

ISSN 0317 - 1671





Winner of the 1996 Prix Galien Canada for Innovative Product

IMPRESSIVE EFFICACY¹ WHEN SABRIL[®] IS ADDED TO FIRST LINE TREATMENT

- Almost 50% of patients (n=333)[†], with mild to moderate partial epilepsy, became seizure-free²
- Significant increase in seizure control[‡] in 66% of patients³
- No negative effects on cognitive function to impair job performance or quality of life⁴
 - $^+$ Of the 333 patients who completed > 100 days of treatment (mean dose 2.6 \pm 0.5 g/day)

iii

‡ ≥ 50% reduction in seizure frequency; N=31, at doses of 1-2 gm per day, duration of 8 weeks, as part of an initial, open phase study. However in clinical trials, Sabril reduced seizure frequency by 50% or more in approximately half of the patients studied.

Neurological function/visual disturbances should be monitored; used with caution in patients with a history of psychosis, in the elderly, in the renally impaired; there could be occupational hazards due to drowsiness; there may be a possible increase in seizures in some patients.

Hoechst Marion Roussel

Hoechst Marion Roussel Canada Inc., Laval, Quebec H7L 4A8 A member of the Hoechst Group

Hoechst 🕑

SABR96016E Used under licence by Hoechst Marion Roussel Canada Inc., Laval, Quebec H7L 4A8 Under H7L 4A8 Laval, Quebec H7L 4A8 Unaver e coul https://goi.brigfoptofs/scibing.infogramationality.com/scibing/sc

PAAB PMAC ®Reg. trade mark of Merrell Pharmaceuticals Inc., USA.



Control over a wide with a low CNS



⁺Withdrawal rates (≥0.6%): dizziness 2.4%, headache 1.3%, nausea 1.3%, blurred vision 1.1%, rash 1.1%, diplopia 0.7%, ataxia 0.6%. If there is any unexplained rash, fever, flu-like symptoms or worsening of seizure control, then hepatic, renal and clotting parameters should be monitored. See Product Monograph for recommendations when prescribing for geriatric patients and for patients with impaired renal and/or liver function. Serious skin-related events may be related to rapid initial titration of dosing and use of concomitant valproic acid. ⁺As with most other AEDs, before prescribing LAMICTAL, refer to Product Monograph for possible drug interactions with other AEDs.



Glaxo Wellcome Inc. [®]Registered trademark of The Wellcome Foundation Limited, Glaxo Wellcome Inc. licensed use.

PAAB CCPP

range of seizure types, side-effect profile

Many patients with epilepsy – across a wide range of seizure types – are unsatisfactorily controlled with conventional therapies.¹ Now there's LAMICTAL, a novel antiepileptic drug (AED) that is chemically unrelated to all other AEDs in current use.¹²

Clinical trials and worldwide experience in over 140,000 patients³ have shown that adjunctive therapy with LAMICTAL offers a wide range of activity in the management of epilepsy for patients who are not satisfactorily controlled by conventional therapies.¹⁻²⁴ In fact, LAMICTAL has been shown to render patients seizure-free^{4-6,25} or to reduce seizure frequency^{1,6,10,15-17,23,25} and severity in up to 65% of patients.^{1,6,16,23,25} LAMICTAL has demonstrated a more favourable CNS side-effect profile in healthy volunteers compared to phenytoin.²⁶ Incidence of somnolence was 13% for LAMICTAL compared to 12% for placebo in pooled results of four double-blind, placebo-controlled studies.⁷ Moreover, the majority of patients taking LAMICTAL will not experience unwanted CNS-related side effects.^{5†} More of your refractory patients will feel better on LAMICTAL.6.23

LAMICTAL has activity across a wide range of seizure types. You can now offer your patients proven tolerability with a low CNS side-effect profile.⁺ When faced with refractory patients, choose LAMICTAL – in 25- , 100- or 150-mg strengths – as your first add-on therapy.[‡]



Introducing BETASERON®

The first treatment for relapsing/remitting multiple sclerosis





150590A01

For an overview of Betaseron dial 1-800-422-1222, access code 400.



Clinical trials have shown that:

- The frequency of exacerbations was reduced by approximately 30%¹
- Moderate and severe exacerbations were reduced by 50%¹
- Disease activity, as measured by MRI, was reduced significantly²
- There was a low incidence of serious side effects¹
- Patient education about common side effects such as injection-site reactions and flu-like symptoms is key to compliance

Over 40,000 patients treated to date³



INFORMATION FOR AUTHORS

The Canadian Journal of Neurological Sciences publishes original articles in neurology, neurosurgery and basic neurosciences. Manuscripts are considered for publication with the understanding that they, or the essence of their content, have not been published elsewhere except in abstract form and are not under simultaneous consideration by another journal. Articles undergo peer review. Manuscripts should be submitted to: James A. Sharpe, M.D., Editor, Canadian Journal of Neurological Sciences, P.O. Box 4220, Station C, Calgary, AB, Canada T2T 5N1

Manuscript Preparation

• Submit five high quality copies of the manuscript and original illustrations. Papers will be accepted in English or French. Manuscripts must be double spaced throughout including references, tables and legends for illustrations. Margins of at least 25mm should be left on all sides.

• After a paper has been reviewed, the author will be requested to submit four copies of the revised manuscript, including illustrations and a computer diskette (3 1/2" or 5 1/4" size) containing the article. Identify clearly first author's name, file name, word processing program and version, and system (i.e. DOS or Mac). Clearly indicate the order and importance of headings.

• For detailed instructions regarding style and layout refer to "Uniform requirements for manuscripts submitted to biomedical journals". Copies of this document may be obtained by writing to the Journal office, but the main points are summarized here. Articles should be submitted under conventional headings of *introduction, methods and materials, results, discussion,* but other headings will be considered if more suitable. Pages of text should be numbered consecutively.

• A title page should identify the title of the article which should be no more than 80 characters including spaces; name of institution(s) from which the work originated; and the name, address, telephone, and fax number of the corresponding author.

• Abstract Original Articles should be accompanied by an abstract of 250 words or less on a separate page, preferably in English and French, although the Journal will provide translation if required. Abstracts of original articles should consist of four paragraphs headed: Background (or objective), Methods, Results and Conclusions. Review articles should be accompanied by an abstract of 150 words or less.

• Acknowledgements including recognition of financial support should be typed on a separate page at the end of the text.

• The SI system (système international d'unités) should be used in reporting all laboratory data, even if originally reported in another system. Temperatures are reported in degrees celsius. English language text may use either British or American spelling, but should be consistent throughout.

• *References* should be numbered in the order of their citation in the text. Those cited only in tables and legends for illustrations are numbered according to the sequence established by the first identification in the text of a particular table or illustration. Titles of journals should be abbreviated according to the style used in Index Medicus. References should list the names of up to five authors; if there are more, cite the first three, then et al. Provide the full title, year of publication, volume number and inclusive pagination for journal articles. For any reference cited as "in press", five copies of the article must accompany the author's manuscript. Do not reference unpublished or "submitted" papers; these can be mentioned in the body of the text and authors must provide five copies of "submitted" manuscripts. Avoid "personal communications" and, if necessary,

include them in the body of the text, not among the references. Reference citations should not include unpublished presentations or other non-accessible material. Books or chapter references should also include the place of publication and the name of the publisher. Examples of correct forms of reference follow:

Journals

Yang JF, Fung M, Edamura R, et al. H-Reflex modulation during walking in spastic paretic subjects. Can J Neurol Sci 1991; 18: 443-452.

Chapter in a book

McGeer PL, McGeer EG. Amino acid neurotransmitters. *In*: Siegel GJ, Albers RW, Agranoff BW, Katzman R, eds. Basic Neurochemistry. Boston: Little, Brown & Co., 1981: 233-254.

• *Illustrations* Submit five original sets of illustrations. We will not return illustrations; therefore, authors should keep negatives for all photographs. Submit high quality glossy black and white photographs preferable 127 x 173 mm (5" x 7"). Original artwork and radiographs should not be submitted. The additional cost of coloured illustrations must be borne by the author; quotations are available upon request from the Journal office. Identify each figure with a label at the back indicating top, figure number and first author. Letters and arrows applied to the figures to identify particular findings should be professional appliques suitable for publication. Photomicrographs should include a calibration bar with a scale indicated on the figure or in the legend. Legends for illustrations should be typed on a separate page from the illustrations.

• *Tables* Type tables double-spaced on pages separate from the text. Provide a table number and title for each. Particular care should be taken in the preparation of tables to ensure that the data are presented clearly and concisely. Each column should have a short or abbreviated heading. Place explanatory matter in footnotes, not in the heading. Do not submit tables as photographs.

• *Review articles* on selected topics are also published. They are usually invited, but unsolicited reviews will be considered. It is recommended that authors intending to submit review articles contact the Editor in advance.

• Letters to the Editor concerning matters arising in recent articles are welcome. Letters should be limited to two double-spaced pages and may include one illustration and a maximum of four references.

• *Permissions and Releases* Any non-original material (quotations, tables, figures) must be accompanied by written permission from the author and the copyright owner to reproduce the material in the Journal. Photographs of recognizable persons must be accompanied by a signed release from the legal guardian or patient authorizing publication.

· Conflict of Interest Authors who have non-scientific or non-academic gain whether it be financial or other from publishing their article are responsible for declaring it to the Editor. Any financial interest, research grant, material support, or consulting fee associated with the contents of the manuscript must be declared to the Editor. These guidelines apply to each author and their immediate families. Conflicts of interest are not necessarily wrong nor do they necessarily change the scientific validity of research or opinion, but the Journal and readers should be aware of the conflict. If the Editor considers the conflict compromise the validity of the paper, it will not be accepted for publication. Authors, editorial staff and reviewers are asked to declare any relationship that would be considered as a conflict of interest whether or not they believe that a conflict actually exists. Information that the Journal receives about conflict or potential conflict will be kept confidential unless the Editor or Associate Editor considers it to be important to readers. Such conflicts will be published in the author credits or as a footnote to the paper, with knowledge of the authors.

When phenytoin or carbamazepine fail to provide adequate seizure control in adult partial seizures...



ADD NEURONTIN

No pharmacokinetic drug interactions with standard anticonvulsants have been observed with Neurontin. Thus, it is easy to use as adjunctive therapy with existing antiepileptic drugs.'

A EURONGABapentin capsules)

Easy to add-on

Neurontin is indicated as adjunctive therapy for the management of patients who are not satisfactorily controlled by conventional therapy. The most commonly observed adverse events not seen at an equivalent frequency in placebo-treated patients were somnolence, dizziness, ataxia, fatigue, nystagmus and tremor. Since Neurontin was administered most often in combination with other antiepileptic agents, it was not possible to determine which agent(s) was associated with adverse events.

PARKE-DAVIS

Scarborough, Ontario M1L 2N3 *T.M. Warner-Lambert Company, Parke-Davis Division, Warner-Lambert Canada Inc., auth. user.

Reference: 1. The Lancet 1994;343:89-91.



For brief prescribing information see pages xxvi, xxvii.

PRESCRIBING INFORMATION Tablets 500 mg

Antiepileptic

ACTION AND CLINICAL PHARMACOLOGY

SABRIL (vigabatrin) is an irreversible inhibitor of gamma-aminobutyric acid transaminase (GABA-T), the enzyme responsible for the catabolism of the inhibitory neurotransmitter gamma-aminobutyric acid (GABA) in the brain. The mechanism of action of vigabatrin is attributed to irreversible enzyme inhibition of GABA-T, and consequent increased levels of the inhibitory neurotransmitter, GABA.

Decreased serum levels of SGOT (ALT) and SGPT (AST) have been observed during treatment with vigabatrin and may be the result of inhibition of these transaminases by vigabatrin. The clinical significance of these findings is unknown

The duration of effect of vigabatrin is thought to be dependent on the rate of GABA-T resynthesis rather than on the plasma concentration of vigabatrin.

Clinical Trials

In clinical trials, including double-blind, placebo-controlled studies involving 354 patients with drug-resistant complex partial seizures, vigabatrin reduced seizure frequency by 50% or more in approximately half of the patients studied.

In clinical trials involving children, the efficacy of vigabatrin was similar to that seen in adult patients with refractory partial seizures. In one study of 70 children with intractable infantile spasms, approximately 70% of the patients had a greater than 50% reduction in spasms. In this study, long-term response was observed in 75% of the children with symptomatic infantile spasms and 36% of the children with cryptogenic infantile spasms. Pharmacokinetics

Vigabatrin is rapidly absorbed following oral administration and peak plasma concentrations are reached within two hours. Vigabatrin is widely distributed with an apparent volume of distribution slightly greater than total body water. The primary route of elimination is via the kidney, with little metabolic transformation occurring. Following a single dose. approximately 70% is excreted in the urine as unchanged drug within the first 24 hours post-dose. The plasma elimination half-life is approximately 5-8 hours in young adults and 12-13 hours in the elderly. In renal impairment the elimination is prolonged and the rate of renal clearance is directly related to creatinine clearance (see PRECAUTIONS and DOSAGE AND ADMINISTRATION). Vigabatrin does not induce the hepatic cytochrome P450 system nor is it extensively metabolized or plasma-protein bound. Administration of vigabatrin with food slightly reduces the rate, but not the extent of absorption.

INDICATIONS AND CLINICAL USE

SABRIL (vigabatrin) is indicated for the adjunctive management of epilepsy which is not satisfactorily controlled by conventional therapy.

There is insufficient data on the usefulness of vigabatrin in monotherapy at this time. Vigabatrin should be used under close monitoring by a neurologist.

CONTRAINDICATIONS

SABRIL (vigabatrin) is contraindicated in pregnancy and lactation (see WARNINGS) and in patients with a known hypersensitivity to vigabatrin or to any components of the prod-

WARNINGS

Neurotoxicity in Animals

Rat, Mouse and Dog: Safety studies carried out in the rat, mouse and dog at doses of 30 to 50 mg/kg/day and higher, caused dose-and time-dependent microvacuolation within certain white matter tracts of the brain (the cerebellum, reticular formation and thalamus in rodents and the columns of the fornix and optic tracts in dogs were most affected). The microvacuolation was caused by the separation of the outer lamellar sheath of myelinated fibres, a change characteristic of non-inflammatory intramyelinic edema.

In both the rat and dog (mouse was not tested), the intramyelinic edema was reversible after stopping the administration of vigabatrin; however, in the mouse and rat, residual changes consisting of swollen axons and mineralised microbodies were observed.

Monkey: In monkeys, the oral administration of 300 mg/ kg/day for 16 months produced minimal microvacuolation with equivocal differences between treated and control animals. Low oral absorption of vigabatrin in the monkey resulted in an actual absorbed dose of 75 mg/kg/day. In spite of the poor absorption, cerebrospinal fluid (CSF) levels of vigabatrin in the monkeys were comparable to those seen in rats treated with 300 mg/kg/day; however, GABA levels in the CSF and the brain cortex in treated monkeys were not significantly different from untreated monkeys. This finding may explain the reason for the equivocal effects, since the intramyelinic edema associated with vigabatrin treatment appears to be to increased brain GABA levels.

Evoked Potentials

Evoked potentials in animals: In the dog, studies indicate that intramyelinic edema is associated with increased latencies in somatosensory and visual evoked potentials. Magnetic resonance imaging (MRI) changes also correlated with intramyelinic edema in the fornix, thalamus and hypothalamus.

Evoked potentials in man: No increased evoked potential latencies have been observed in man. Two hundred and twenty-one patients treated for 4-5 months showed no significant evoked potential latency changes at the end of treatment as compared to baseline. MRI results in man did not show the changes observed in dogs who had intramyelinic ederna

References

1 Grant SM, Heel RC, A Review of its Pharmacodynamic and Pharmacokinetic Properties, and Therapeutic Potential in Epilepsy and Disorders of Motor Control. Drugs. Adis International: June 1991, Vol. 41 No. 6, pg. 889-926.

PAAB PMAC SABR96016E

Arzimanoglou AA, Dumas C, Chirardi L et al. Multicentre clinical evaluation of vigabatrin (Sabril) in mild to moderate partial epilepsies. Epilepsia 1995;36(S3)

Reynolds BH, Ring HA Farr IN et al. Open, double-blind and long term study of vigabatrin in long term epilepsy. Epilepsia 1991;32:(4):530-538.

Doddrill CB, Arnett JL, Sommerville KW, Sussman NM. Effects of differing dosages of vigabatrin (Sabril) on cognitive abilities and quality of life in epilepsy. Epilepsia 1995;36(2):164-173. 4

Registered trade mark of Merrell Pharmaceuticals Inc., USA.

Used under licence by Hoechst Marion Roussel Canada Inc., Laval, Quebec H7L 4A8

Postmortem neuropathological changes seen in 11 patients who were treated with vigabatrin (mean duration of treatment was 28 months, and the longest treatment was 6 years) showed no myelin vacuolation in the white matter that was considered to be outside of the control range.

Although clinical trials have not revealed the type of neurotoxicity seen in animal studies, because of increased CSF GABA levels observed in humans, it is recommended that patients treated with vigabatrin be closely observed for adverse effects on neurological function, with special attention to visual disturbance.

Use in Pregnancy and Lactation: In a teratology study in the rabbit a dose-related incidence, 2% and 9%, of cleft palate was observed at doses of 150 and 200 mg/kg/day, respectively.

In animal reproductive studies neurohistopathology was not performed on the fetuses, therefore it is not known whether micro-vacuolation occurred in utero. The possibility that microvacuolation or other neurotoxicity may occur in human fetuses cannot be discarded. PRECAUTIONS

Use in Patients with a History of Psychosis Behavioural disturbances such as aggression and psychotic episodes have been reported following initiation of vigabatrin therapy. A history of abnormal behaviour or psychosis appears to be a predisposing factor for such reactions, therefore treatment in such patients should be initiated cautiously at low doses and with frequent monitoring.

Use in the Elderly and in Patients with Renal Impairment Vigabatrin is eliminated via the kidney and caution should be exercised when administering the drug to elderly patients and to patients with renal impairment (see DOSAGE AND ADMINISTRATION).

Use in Patients with Myoclonic Seizures As with other antiepileptic drugs, some patients may experience an increase in seizure frequency with vigabatrin. Patients with myoclonic seizures may be particularly liable to this effect.

Discontinuation of Therapy As with other antiepileptic drugs, abrupt discontinuation may lead to rebound seizures. If a patient is to be withdrawn from vigabatrin treatment, it is recommended that this be done gradually by reducing the dose over a 2 to 4 week period if possible

Drug Interactions A gradual reduction of about 20% in plasma phenytoin concentration has been observed following add-on therapy with vigabatrin. The mechanism whereby this occurs is unknown. Limited data from clinical trials suggest that increasing the phenytoin dose to compensate may not be necessary.

Occupational Hazards Patients with uncontrolled epilepsy should not drive or handle potentially dangerous machinery. During clinical trials, the most common adverse reactions observed were drowsiness and fatigue. Patients should be advised to refrain from activities requiring mental alertness or physical coordination until they are sure that vigabatrin does not affect them adversely.

ADVERSE REACTIONS

SABRIL (vigabatrin) is generally well tolerated in epileptic patients. Adverse events are mainly CNS-related and probably a secondary consequence of increased GABA levels caused by vigabatrin. The safety of vigabatrin was evaluated in 2081 epileptic patients treated in clinical trials. The relationship of adverse events to vigabatrin therapy was not clearly established as patients were taking other antiepileptic drugs concomitantly. The most frequently reported adverse events were somnolence (12.5%), fatigue (9.2%), and weight gain (5.0%).

The following adverse events were observed in more than 1% of patients:

Adverse Events Reported By More Than 1% of Patients					
Body System/ Adverse Event	Number of Patients	incidence n=2081			
Nervous					
somnolence	261	12.5			
neadache	80	3.8			
lizziness	79	3.8			
ervousness	56	2.7			
tepression	52	2.5			
nemory disturbances	47	2.3			
liplopia	46	2.2			
aggression	42	2.0			
itaxia	39	1.9			
ertigo	39	1.9			
yperactivity	37	1.8			
rision abnormal	34	1.6			
onfusion	29	1.4			
nsomnia	26	1.3			
mpaired concentration	25	1.2			
ersonality disorder	23	1.1			
gitation	21	1.0			
ligestive ———					
bdominal pain	34	1.6			
onstipation	29	1.4			
omiting	28	1.4			
ausea	28	1.4			
ody as a Whole 🛛 ———		1			
stigue	192	9.2			
veight gain	104	5.0			
isthenia	23	1.1			

Adverse events reported with a frequency of less than 1% include: anxiety, emotional lability, behavioural disturbances including psychosis, irritability, tremor, abnormal gait,

Hoechst Marion Roussel

Hoechst Marion Roussel Canada Inc., Laval, Quebec H7L 4A8 A member of the Hoechst Group



х

speech disorder, increased appetite, and dyspepsia. As with other antiepileptic drugs, some patients may experience an increase in seizure frequency with vigabatrin treatment (see PRECAUTIONS).

Laboratory data indicate that vigabatrin treatment does not lead to renal or hepatic toxicity. Chronic treatment with vigabatrin may be associated with a slight decrease in hemoglobin, which rarely attains clinical significance.

Pediatric Safety Safety data is available in 299 children, aged 2 months to 16 years (1 patient was 18 years of age), participating in clinical trials with vigabatrin. Relationship of adverse events to vigabatrin therapy was not clearly established as children were taking other antiepileptic drugs concomitantly.

The most frequent adverse event observed in children was "hyperactivity" (reported as hyperkinesia 7.7%, agitation 2.3%, excitation 0.3% or restlessness 0.7%), which was observed in 11.0% of children, an incidence higher than that seen in adults. Other commonly reported adverse events were somnolence (8,096) and weight gain (3,096). The following adverse events were reported in children with a frequency greater than 1%:

Adverse Events Reported By More Than 1% of Pediatric Patients						
Body System/ Adverse Event	Number of Patients	Incidence n=299				
Nervous somnolence hyperkinesia aggression insomnia agitation alatxia emotional lability headache increased seizures Digestive	24 23 8 8 7 7 3 3 3 3	80 7.7 2.7 2.3 2.3 1.0 1.0 1.0				
vomiting nausea increased saliva Body as a Whole	6 3 3	2.0 1.0 1.0				
weight gain fatigue hypotonia	9 8 3	3.0 2.7 1.0				

SYMPTOMS AND TREATMENT OF OVERDOSAGE

There is no specific antidote. The usual supportive measures should be employed. Two cases of SABRIL (vigabatrin) overdose have been reported. In the first case, the patient accidentally took a dose of 14 g daily for 3 days and transient vertigo and tremor were reported. In the second case, an 18-year old female took 30 g of vigabatrin and 250 mg of chlorazepate in a suicide attempt. The patient was admitted to hospital in a state of coma which lasted four days; however, the coma was considered to be due to the chlorazepate rather than vigabatrin. The patient recovered without sequelae.

DOSAGE AND ADMINISTRATION

SABRIL (vigabatrin) is intended for oral administration once or twice daily and may be taken with or without food. Sabril should be added to the patient's current antiepileptic therapy.

Instructions to the patient on the use of SABRIL are provided in the INFORMATION FOR THE CONSUMER section.

Adults The recommended starting dose is 1 g/day, although patients with severe seizure manifestations may require a starting dose of up to 2 g/day. The daily dose may be increased or decreased in increments of 0.5 g depending on clinical response and tolerability. The optimal dose range is between 2-4 g/day. Increasing the dose beyond 4 g/day does not usually result in improved efficacy and may increase the occurrence of adverse reactions.

Children The recommended starting dose in children is 40 mg/kg/day, increasing to 80 - 100 mg/kg/day depending on response. Therapy may be started at 0.5 g/day, and raised by increments of 0.5 g/day weekly depending on clinical response and tolerability. Elderly and Renally Impaired Patients Vigabatrin is almost exclusively eliminated

Bodyweight	Daily Dose	No. Tablets/Day
10 - 15 kg	0.5 — .1 g/day	1 — 2 tablets/day
16 - 30 kg	1 — 1.5 g/day	2 — 3 tablets/day
31 - 50 kg	1.5 — 3 g/day	3 — 6 tablets/day
> 50 kg	2 — 4 g/day	4 — 8 tablets/day

via the kidney and, therefore, caution should be exercised when administering the drug to the elderly, and more particularly to patients with creatinine clearance less than 60 mL/min. It is recommended that such patients be started on a lower dose of vigabatrin and observed closely for adverse events such as sedation and confusion AVAILABILITY OF DOSAGE FORMS

and imprinted "SABRIL" on one side. SABRIL is available in HDPE bottles containing 100

Tablets Each SABRIL (vigabatrin) 500 mg tablet is white to off-white film-coated, oval biconvex,

tablets

Product Monograph available on request.





Gagnant du prix Galien Canada 1996 à titre de produit le plus innovateur de l'année

CCPP ACIM SABR96016F

® Marque déposée de Merrell Pharmaceuticals Inc., É.-U., utilisée sous licence par Hoechst Marion Roussel Canada Inc., Laval (Québec) H7L 4A8

Pour documentation voir page x. https://doi.org/10.1017/S0317167100020990 Published online by Cambridge University Press

SABRIL® DONNE DES RÉSULTATS IMPRESSIONNANTS¹ LORSQU'IL EST AJOUTÉ AU TRAITEMENT DE PREMIER RECOURS

- Maîtrise complète des crises chez près de 50 % des patients souffrant d'épilepsie partielle légère ou modérée (n = 333)⁺²
- Augmentation significative[†] de la maîtrise des crises[‡] chez 66 % des patients³
- Aucun effet négatif sur la fonction cognitive pouvant nuire au rendement au travail ou à la gualité de vie du patient⁴
- Parmi 333 patients ayant reçu un traitement > 100 jours (dose moyenne : 2,6 ± 0,5 g/jour)
- Réduction ≥ 50 % de la fréquence des crises. Trente et un patients ont reçu des doses de 1 à 2 g par jour pendant huit semaines au cours de la phase ouverte initiale d'un essai clinique. Lors d'autres essais, l'administration de Sabril® a toutefois entraîné une réduction de > 50 % de la fréquence des crises chez environ la moitié des patients.

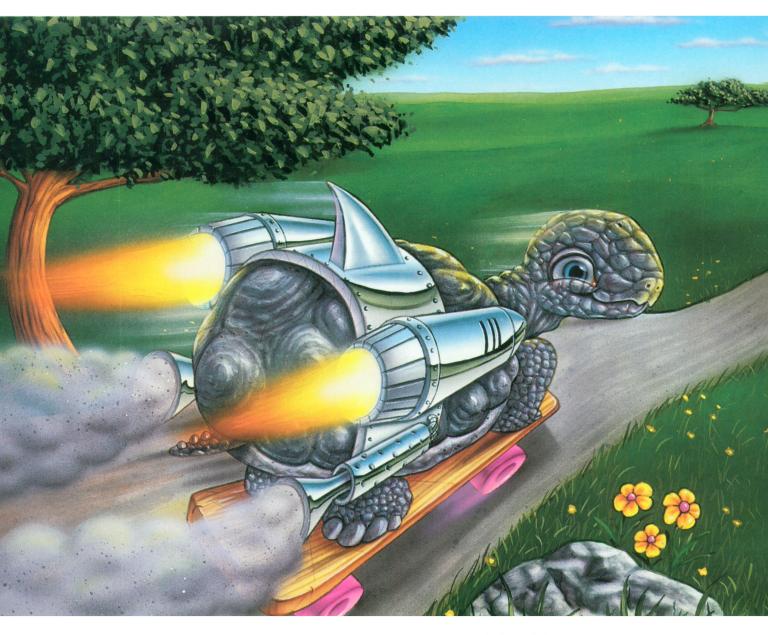
On devra assurer une surveillance du patient en présence de troubles neurologiques ou visuels. Administrer avec prudence chez les patients qui présentent des antécédents de psychose, les personnes âgées et les patients souffrant d'insuffisance rénale. La somnolence est susceptible d'accroître le risque d'accidents du travail. La vigabatrine peut entraîner une augmentation de la fréquence des crises chez certains patients. Xi

Hoechst Marion Roussel

Hoechst Marion Roussel Canada Inc., Laval (Québec) H7L 4A8 Une société du Groupe Hoechst



Introducing MIGRANAL A 5-HT₁ agonist that starts fast and offers



5-HT, agonist therapy

- MIGRANAL relieves migraine headaches and associated symptoms¹
- Nasal administration bypasses the GI tract

Fast onset of relief

- Can be taken at any stage of the migraine 1.0
- Clinical response begins within 30 minutes
- MIGRANAL relieved up to 70% of migraines at 4 hours (n=105)^{2,†}

Long-lasting reliefth

- Long half-life: 10 hours
- 85% of responders had no return of migraine within 24 hours after taking MIGRANAL (n=73)²
- Therefore, MIGRANAL may help avoid the need for repeated dosing, rescue medication, and the associated costs

 $[\]Diamond$ For best results, treatment should be initiated at the first sign/symptom of a migraine attack.

[†] Relief = from moderate/severe pain to mild/no pain

 $[\]dagger\dagger$ Up to 24 hours with a single 2 mg dose

Nasal Spray long-lasting relief from migraine



Generally well-tolerated in clinical trials

• Most common adverse events were transient and self-limiting, and may be attributable to the route of administration^{2,3}: Rhinitis (25% incidence) reported as rhinitis, rhinorrhea, nasal/nose congestion, dryness, edema and excessive sneezing; other side effects observed included: nausea (9%), taste disturbance (7%) and vomiting (4%).

MIGRANAL is contraindicated in patients predisposed to vasospastic reactions. Please see Prescribing Information for more details.





*Registered trademark

SANDOZ CANADA INC. Dorval, Québec H9R 4P5 MIG-96-10-3501E

SANDOZ

Traitement antiépileptique d'appoint La maîtrise d'un vaste éven un profil discret d'effets



[†]Taux d'abandon (≥ 0,6 %) : étourdissements 2,4 %, céphalées 1,3 %, nausées 1,3 %, vision trouble 1,1 %, éruptions cutanées 1,1 %, diplopie 0,7 %, ataxie 0,6 %. En présence d'éruption cutanée inexpliquée, de fièvre, de symptômes pseudo-grippaux, ou de diminution de la maîtrise des crises, il faut surveiller les paramètres hépatiques, rénaux ou de coagulation. Voir dans la monographie du produit les recommandations chez les patients gériatriques et en cas d'atteinte rénale ou hépatique. De sérieux incidents cutanés peuvent être causés par un ajustement posologique initial rapide et l'emploi concomitant d'acide valproïque. [†]Comme avec la plupart des autres antiépileptiques, avant de prescrire LAMICTAL, vérifier dans la monographie du produit les risques d'interaction médicamenteuse avec d'autres antiépileptiques.

GlaxoWellcome

Lamictal

Glaxo Wellcome Inc Bureau d'affaires du Québec [®]Margue déposée de The Wellcome Foundation Limited, Glaxo Wellcome Inc., usager inscrit.

PAAB CCPP

tail de types de crises avec secondaires sur le SNC

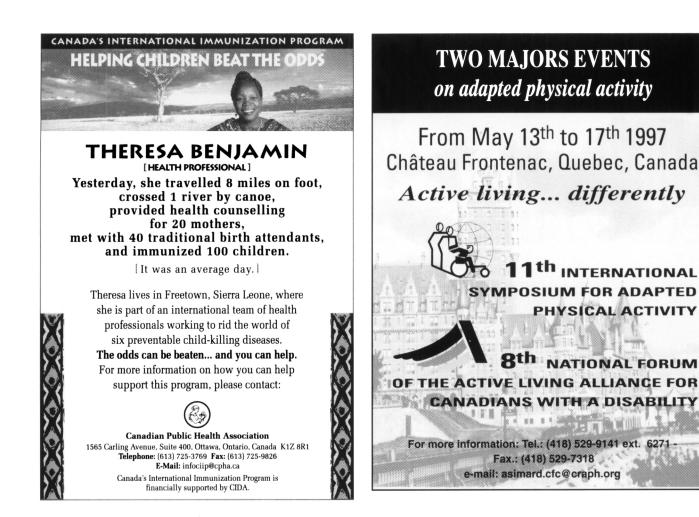
De nombreux patients souffrant d'épilepsie – dans un vaste éventail de types de crises ne sont pas contrôlés de façon satisfaisante par les traitements conventionnels¹. Maintenant, il y a LAMICTAL, un nouvel antiépileptique inédit sans parenté chimique avec aucun autre antiépileptique actuel^{1,2}.

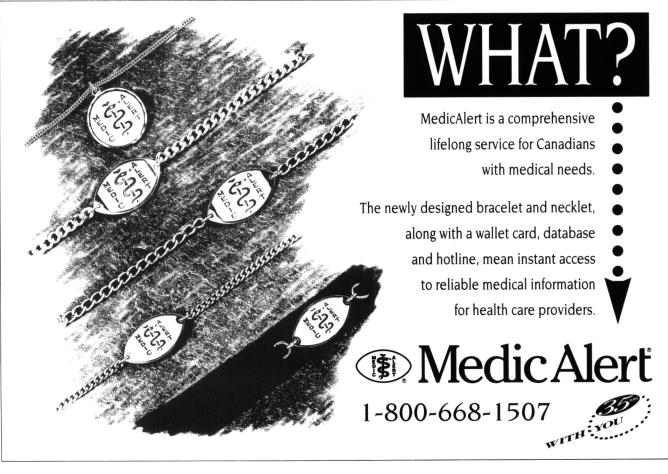
Les essais cliniques et l'expérience mondiale acquise chez plus de 140 000 patients³ ont montré qu'en traitement d'appoint, LAMICTAL offre une activité étendue dans le traitement de l'épilepsie chez les patients qui ne sont pas contrôlés de façon satisfaisante avec les traitements conventionnels¹⁻²⁴. En fait, LAMICTAL a suprimé les crises^{46,25} ou diminué leur fréquence 1,6,10,15-17,23,25 et leur gravité chez jusqu'à 65 % des patients^{1,6,16,23,25}. Chez des volontaires en santé, LAMICTAL a présenté un profil d'effets secondaires sur le SNC plus favorable que la phénytoïne²⁶. L'incidence de somnolence a été de 13 % pour LAMICTAL par rapport à 12 % pour le placebo dans les résultats combinés de quatre études à double insu contrôlées par placebo⁷. De plus, la plupart des patients sous LAMICTAL n'éprouveront pas d'effets indésirables qui affectent le SNC^{5†}. Un plus grand nombre de vos patients réfractaires se sentiront donc mieux sous LAMICTAL^{6,23}.

LAMICTAL exerce une activité dans un vaste éventail de types de crises. Vous pouvez maintenant offrir à vos patients un médicament caractérisé par une tolérabilité éprouvée et un profil discret d'effets indésirables sur le SNC⁺. Pour vos patients réfractaires, choisissez LAMICTAL – en 25, 100 ou 150 mg – comme votre premier traitement d'appoint[‡].



ΧV





L'épilepsie n'effleure même pas ces esprits vifs... Tegretol CR au boulot !



Maîtrise efficace des crises

 Bienfait clinique significatif et excellente maîtrise des crises épileptiques^{1,2}.

Profil d'innocuité éloquent

- Concentrations plasmatiques stables de carbamazépine pouvant mener à une incidence plus faible d'effets indésirables liés aux concentrations que Tegretol ordinaire⁴.
- Niveau élevé de tolérabilité^{2*}.

L'un des effets secondaires les plus fréquents de la carbamazépine est la somnolence. Cette réaction ne survient généralement qu'en début de traitement⁴ et peut êtra amenisée par le recours à la carbamazépine à libération contrôlée (Tegretol[®] CR)⁵.

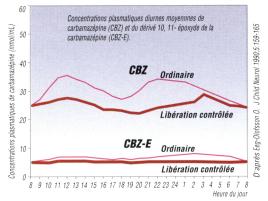
La carbamazépine n'est pas efficace pour le traitement des absences, des crises myocloniques ou atoniques et ne prévient pas la généralisation de la décharge épileptique. En outre, une exacerbation des crises peut partois survenir chez les patients ayant des absences atypiques⁴.

*Consulter les mises en garde figurant à la monographie avant de prescrire.

Permet d'atteindre et de maintenir une bonne maîtrise des crises tout en offrant une faible incidence d'effets indésirables liés aux concentrations⁴.



Courbes des concentrations plasmatiques diurnes de Tegretol ordinaire et de Tegretol CR chez les enfants (n=25).³



Pr Tegretol CR vs Pr Tegretol ordinaire

- Efficacité et tolérabilité équivalentes ou améliorées⁶
- Peut réduire considérablement la fréquence des crises⁷
- Entrave moins la fonction cognitive⁵

Geigy Spécialités pharmaceutiques Dorval (Québec) H9S 181 ou Mississauga (Ontario) L5N2W5

PAAB CCPP PMAC ACIM

https://doi.org/10.1017/S0317167100020990 Published online by Cambridge University Press

Pour documentation voir pages xxiv, xxv.

32ND MEETING OF THE CANADIAN CONGRESS OF NEUROLOGICAL SCIENCES June 24 - 28, 1997 Saskatoon, SK, Canada

PRELIMINARY PROGRAM

Guest Lecturers

Dr. Peter Dyck, Rochester, MN Dr. Patrick Kelly, New York, NY Dr. Ali Rajput, Saskatoon, SK Dr. Robert C. Vannucci, Hershey, PA Dr. Anne Young, Boston, MA Dr. Kevin Foley, Memphis, TN Dr. Fred Andermann, Montreal, QC

Topics

- Cerebrovascular Disease in Infants and Children
- Neurobiology DNA
- Peripheral Neuropathies
- Movement Disorders
- Malignant Gliomas
- Lumbar Spine

- Dementia
- Trauma
- Cerebrovascular Disease
- Multiple Sclerosis
- Headache

For more information, please contact us at:

Suite 810, 906 - 12 Avenue SW Calgary, Alberta, Canada T2R 1K7 Telephone: (403) 229-9544 Facsimile (403) 229-1661 E-mail: brains@ccns.org

1997 NORTH AMERICAN STROKE MEETING Clinical Aspects of Stroke Diagnosis and Treatment October 16-18, 1997 Montreal, Quebec, Canada

The focus of this conference is to educate physicians, surgeons and other health professionals in clinical aspects of stroke, and the enhancement of their skills in diagnosing, treating and managing patients with stroke.

Topics

- Clinical Trials
- Cerebral Angioplasty
- Acute Cerebral Ischemia
- Hemorrhagic Stroke
- Organized Stroke Care

- Long Term Stroke Prevention
- Nutrition and Swallowing
- Thrombolysis in Acute Stroke
- Ultrasound in Cerebrovascular Disease

For meeting information please contact Ms. Kimberly Anderson at the CCNS (as above) or Ms. Thelma Edwards, R.N., National Stroke Association at (303) 649-9299 ext. 919 for additional information.

https://doi.org/10.1017/S0317167100020990 Published online by Cambridge University Press XVIII

Lorsque la phénytoïne ou la carbamazépine ne réussissent pas à procurer une maîtrise adéquate des crises partielles chez l'adulte.



AJOUTER NEURONTIN

Aucune interaction pharmacocinétique avec les anticonvulsants traditionnels n'a été observée avec Neurontin. Il est par conséquent facile de l'utiliser comme traitement adjuvant avec les antiépileptiques existants'.

Facile à utiliser comme adjuvant

Neurontin est indiqué comme traitement d'appoint pour les patients dont l'état épileptique n'est pas bien maîtrisé par les traitements traditionnels. Les effets secondaires les plus courants qui n'ont pas été observés à une fréquence équivalente chez les patients sous placebo sont les suivants : somnolence, étourdissements, ataxie, fatigue, nystagmus et tremblements. Etant donné que Neurontin était administré le plus souvent en association avec d'autres antiépileptiques, il était impossible de déterminer à quel(s) agent(s) les effets secondaires étaient associés.

PARKE-DAVIS

Scarborough, Ontario M1L 2N3 *M. de comm. Warner-Lambert Company, Parke-Davis Division, Warner-Lambert Canada Inc., usager aut.

Référence : 1. The Lancet 1994;343:89-91.



(capsules de gabapentine)

Pour documentation voir pages xxvi, xxvii.

Voici MIGRANAL en

Un agoniste des récepteurs 5-HT, qui agit rapidement et



Agoniste des récepteurs 5-HT,

- MIGRANAL soulage la migraine et les symptômes connexes¹.
- L'administration par voie nasale permet de contourner le tractus gastro-intestinal.

Pour un soulagement rapide

- On peut prendre MIGRANAL à n'importe quel stade de la migraine ^{1,3}.
- La réponse clinique commence à se manifester en moins de 30 minutes ¹.
- Jusqu'à 70 % des migraines sont soulagées 4 heures après l'administration de MIGRANAL $(n = 105)^{2.4}$.

Pour un soulagement durable^{tt}

- Longue demi-vie : 10 heures
- Pas de réapparition de la migraine chez 85 % des répondeurs au cours des 24 heures suivant l'administration de MIGRANAL (n = 73) 2
- Par conséquent, MIGRANAL peut permettre d'éviter le renouvellement fréquent de la dose, la prise de médicaments d'urgence, ainsi que les coûts qui s'y rattachent.

OPour de meilleurs résultats, entreprendre le traitement dès les premiers signes ou symptômes d'une crise migraineuse.

[†] Soulagement = disparition complète ou atténuation de la douleur modérée ou grave

tt Jusqu'à 24 heures avec une seule dose de 2 mg

vaporisateur nasal

jui offre un soulagement durable de la migraine



Généralement bien toléré lors des essais cliniques

 Les effets indésirables les plus courants étaient transitoires, spontanément résolutifs et peut-être imputables à la voie d'administration^{2.3}. La rhinite (incidence de 25 %) comprend : rhinite, rhinorrhée, congestion nasale, sécheresse et oedème de la muqueuse nasale et éternuements en rafale. Parmi les autres effets secondaires observés, mentionnons les nausées (9 %), les perturbations gustatives (7 %) et les vomissements (4 %).

MIGRANAL est contre-indiqué chez les patients prédisposés aux réactions angiospastiques. Veuillez consulter les renseignements posologiques pour obtenir plus de détails.





*Marque déposée

SANDOZ CANADA INC.

MIG-96-10-3501F



(Québec) ⊦



in EPILEPSY

treatment goal is complete control

Impressive degree of complete seizure control¹

Frisium is a "remarkably effective and [generally] safe add-on anti-epileptic drug"¹

Effective in all seizure types, in adults and children alike²

Once-daily dosage, preferably at bedtime[†]



[†] Daily dose can be divided for some patients

Frisium is indicated as adjunctive therapy in epileptic patients not adequately stabilized with their current anticonvulsant therapy. As with all benzodiazepines, patients (particularly geriatrics) should be cautioned accordingly. Most frequent adverse effects (> 1%) include drowsiness, dizziness, fatigue, ataxia, weight gain, nervousness, behaviour disorder, hostility and blurred vision.

Hoechst Marion Roussel

Hoechst Marion Roussel Canada Inc., Laval, Quebec H7L 4A8 A member of the Hoechst Group



[®]Reg. trade mark of Hoechst AG, Germany

PAAB PMAC FRI 96012 E

For brief prescribing information see page xxxii.