

GERONTO-McGILL

BULLETIN OF THE MCGILL CENTRE FOR STUDIES IN AGING



May - June 2003

ISSN 0838-2263

Volume 19, No. 3

NEW DRUG SHOWS PROMISE FOR TREATING LATE-STAGE ALZHEIMER'S DISEASE

by Alison McTavish

A new drug that suppresses the activity of an important neurotransmitter in the brain is the first effective treatment for patients in the later stages of Alzheimer's disease, according to the results of a large multi-centre study published in the *New England Journal of Medicine*.

Alzheimer's disease is the most common form of dementia affecting people over age 65. There are currently no treatments for slowing the progression of moderate to severe Alzheimer's. At these stages, patients begin to lose the ability to care for themselves. They have trouble dressing and bathing, and many can no longer perform simple tasks of daily life.

The new drug, called memantine, slows the mental and physical deterioration of patients with moderate to severe Alzheimer's disease. The patients in the study appeared to decline only half as much as expected over a six-month period, a result that will be good news for both patients and caregivers.

Memantine works by blocking the activity of a neurotransmitter in the brain called glutamate. Nerve cells that respond to glutamate are involved in memory and learning. The available treatments for Alzheimer's are effective only in the mild to

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STRENGTHENING THE SOCIAL SIDE OF EPIDEMIOLOGY AT MCGILL

An Interview with Dr. Rebecca Fuhrer, Professor and Chair of the Department of Epidemiology, Biostatistics and Occupational Health

by Julie Comber

Is depression a risk factor for developing dementia? How do social inequalities impact health and disease? What psychosocial risk factors are implicated in the occurrence of physical illness, aging, and mortality? Are there differences in the risk factors for depression in women compared to men? These are but some of the questions that Dr. Fuhrer has pondered in a career that has brought her from the US to France, England, and now here to Montreal.

A Globe-Trotting Career

Dr. Fuhrer gained her B.A. in Psychology at Brooklyn College (City University of New York). She then achieved her Master's and Ph.D. at the University of California at San Francisco, both in Medical Information Science. She had wanted to develop information systems that would assist doctors and hospitals in providing better patient care. However, as computer-assisted medical decision-making is based on sound evidence, she discovered that insufficient epidemiological data was the weakest component of the computer models. This caused her to adjust her course, beginning with a postdoctoral fellowship in Paris,



France, at the Institut national de la santé et de la recherche médicale (INSERM). After several years as a professor at the Harvard School of Public Health, she returned to Europe, where she has spent the majority of her career as a research scientist at INSERM and as a senior lecturer at University College London's Department of Epidemiology and Public Health. Last year she came to Montreal to serve as Chair of McGill's Department of Epidemiology, Biostatistics and Occupational Health.

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MEETINGS

BRAINSTORMING AT MCGILL: THE IMPLICATIONS OF LIFE-EXTENSION RESEARCH

by Julie Comber

If people could live to be 150, 200, or even 250 years old, would this destroy marriage as we know it? Would people become bored if they lived too long? Would access to life-extending technology widen the already heinous chasm between the health of the rich

and of the poor? These were just a few of the many questions and concerns explored and debated at McGill's Biomedical Ethics Unit over two sunny days this past April.

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NOVARTIS

NEW DRUG SHOWS PROMISE FOR TREATING LATE-STAGE ALZHEIMER'S DISEASE

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moderate stages of the disease, and are aimed at a different neurotransmitter system in the brain.

The study involved 252 patients in 32 medical centres in the United States. The average age of the patients was 76 and 67% were women. All patients lived independently in the community and were not institutionalized. All had trouble putting on their clothing and many also had difficulties with bathing and continence. The patients could still speak to some extent and were still able to walk.

Over 28 weeks, patients received 10 milligrams of memantine or a placebo twice a day. A series of behavioural, cognitive, and functional tests were used to evaluate patients at the beginning and end of the study, and investigators interviewed caregivers to assess the patients' activities during the study.

Overall, the study found that the patients who were taking the memantine showed significantly less deterioration in cognition and in the ability to perform daily life activities than those taking the placebo. Interestingly, patients taking the placebo experienced more side effects than those who received memantine. Patients taking memantine experienced few side effects.

It isn't yet known if memantine can slow the disease for more than six months, although it is possible. The drug also may be effective in milder forms of the disease, and in combination with other medicines. More studies are underway to assess its other potential uses.

Reference

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An Interview with Dr. Rebecca Fuhrer, Professor and Chair of the Department of Epidemiology, Biostatistics and Occupational Health

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Strengthening the Social Sciences Aspects of Epidemiology at McGill

"I think recruiting a social epidemiologist to chair the department is a statement on the part of the Faculty of Medicine that is consistent with McGill's strategic priorities," said Dr. Fuhrer, referring to McGill's Strategic Research Plans for multidisciplinary domains (available at <http://www.mcgill.ca/strategic/research/domains/>). "Clinical epidemiology has long been a great strength of this department, and remains so. Choosing someone with my background recognizes that social epidemiology is a complementary strength that should also be promoted."

Dr. Fuhrer was attracted to McGill due to its long tradition of excellence as well as the Department of Epidemiology, Biostatistics and Occupational Health's strong reputation in research and in training students who are strong in epidemiology and biostatistics and their application to health. In addition, "there is a critical mass of other investigators throughout the campus who bring other disciplines to the study of health, and so the opportunity to bridge these worlds was a wonderful challenge at this time in my professional career," she explained. "And the quality of life and multiculturalism here made me think Montreal could be a home for myself and my family."

Research

Dr. Fuhrer seeks to balance her administrative duties as Chair and supervising her graduate students with her research interests. These interests include: the epidemiological study of the relationship between mental illness and physical illness, normal and pathological aging, in particular cognitive aging; psychosocial risk factors and mechanisms that are involved in the occurrence of illness; and how social relations impact on health, disease occurrence and mortality. Entwined with these interests is how social position potentially modifies these relationships and how these inequalities affect the health of populations.

Her latest paper, due out this summer, returns to an earlier theme in Dr. Fuhrer's work: the relationship between depression and dementia. Dr. Fuhrer had been working on psychiatric disorders and the epidemiology of depression when she was asked to collaborate on the Personnes âgées Quid (PAQUID) study that began in 1988.

PAQUID is a cohort study of normal and pathological aging in 3777 men and women who were over the age of 65 and living in the community at the start of the study. Participants were randomly selected from electoral roles in the Aquitaine region of southwest France.

One intriguing finding in her forthcoming paper was that recent depression (but not depression earlier in life) was a risk factor for dementia in men, but not in women. Dr. Fuhrer speculates that the depression they detected in the study may reflect vascular depression in the men. "Think of depressive symptoms or syndrome as a constellation of symptoms, almost like a psychological fever." It lets you know something is wrong, but there could be many different underlying causes for the same set of symptoms. Depressive symptoms can be correlated with many things other than clinical depression, such as physical illnesses or bereavement or loss. Depression can serve as a marker for other pathologies. For example, many studies have reported depression to be predictive of the incidence and prognosis of cardiovascular disease, and mortality due to cardiovascular disease. If depressive symptoms of sufficient duration are identified, they may be informing the physician that there is some underlying (and undetected) vascular pathology, and this underlying vascular pathology could accelerate the onset of dementia. This could be one explanation for the relationship between depression and dementia – depression itself is not the risk factor, but rather is the marker for the underlying vascular pathology (such as brain lesions and multi-infarcts) that could add to, amplify or even accelerate the dementing process.

"We did not set out to study the connection between dementia and 'vascular depression' per se. Our objective was to determine the existence of differences between men and women in the association between depression and dementia, and when we found that a difference existed, we examined alternative plausible explanations. I'd love to do the next study, to confirm or refute this hypothesis. We cannot take this further in this sample, because we did not collect the data that would be needed to answer this question. But we are examining other datasets that may allow us to move forward with this hypothesis."

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COVER HOME CARE AND SAVE MONEY

by Julie Comber

Provide better care and save money while doing it? It seems too good to be true. But not according to the Final Report of the National Evaluation of the Cost-Effectiveness of Home Care, prepared for the Health Transition Fund, Health Canada (available online at www.homecarestudy.com). The National Evaluation of the Cost-Effectiveness of Home Care, a collaborative effort of the Centre for Studies in Aging at the University of Victoria and Hollander Analytical Services Ltd., is an integrated program of research comprising 15 studies across Canada. One of the main goals of the program was to conduct studies to determine if home care could be a cost-effective alternative to institutional care, such as retirement residences and hospitals.

The synthesis report, published on 23 September 2002, claims that home care costs only 40 to 75% as much as residential care. Potential savings are especially high for home care clients who are in a stable health condition. It is noteworthy that home care clients were just as satisfied as clients in long-term-residential care with their quality of life and with the services they received. Therefore, financial savings did not come at the cost of inferior care.

However, like the literature that pre-dated the report, results were mixed for whether home care is more cost-effective than acute care. Cost-effectiveness depended on the type of intervention and the type of home care initiative. More research is needed to determine what kind of situation would entail home care being a cost-effective alternative to a hospital stay.

The study also served as a baseline to determine characteristics of current home care clients, an important goal since there is no national database on the subject. The report found that home care clients were slightly more likely to be women – on average, 1.3 women for every man, and that the majority of people were seniors, especially for long-term as opposed to short-term home care.

"Moving home care and home-support services into a universal coverage program would help ensure that seniors and other people with chronic health problems are given the appropriate type of care for their needs. Home support costs are already provided without extra charge in Manitoba, Ontario and Quebec," explains Dr. Hollander, a Victoria-based health economist who is co-director of the research program.

Dr. Chappell, a professor at the University of Victoria and the other co-director of the program, says: "There has been a great deal of discussion about home care, including a national home-care program, and we believe that it is important that policy makers and the public are aware that home care and home-support services can help achieve the seemingly contradictory goals of saving money and improving care and the quality of life for clients."

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Why wasn't this relationship detected in women? Dr. Fuhrer explained that women report more depressive symptoms than men, and this finding is consistent across cultures and time. Hence, depressive symptoms may reflect more heterogeneity in the origin of the symptoms. "This would attenuate the observed association between this risk factor and the outcome, in this case, dementia," she said. "We may want to study this association further in women who in mid-life are identified with an increased risk for cardiovascular disease."

Dr. Fuhrer pointed out the potential clinical implications of her finding: "If this paper holds true, then when depression is detected in later life, this could be indicative of pre-symptomatic vascular pathology. This means clinicians may be able to intervene upstream. If the underlying vascular pathology is treated, it is possible this could help slow the pathological process, either postponing or averting cognitive deterioration or dementia. However, at this point the above statements can only be considered informed speculation. This calls for well designed experimental studies that will assess social, behavioural and pharmacological interventions."

Future Directions

Dr. Fuhrer hopes to give additional orientation to the research in her department, with an emphasis on the psychosocial aspects of health, and how these aspects interact with genetics. This reflects her belief that you cannot separate clinical from social factors, and therefore we should rethink some interventions. "Clinicians need to recognize the importance of some of the social phenomena, and should not rely on technology alone when psychosocial avenues exist (and may be less expensive) to treat patients. Physicians are trained to cure and care when illness is manifest in an individual. Most prevention strategies are targeted to groups or populations, and we should not expect clinicians to take on this responsibility in addition to patient care. This is why it is important to educate medical students to focus more on the social determinants of health, in order to contextualize their role in the health of the community. I think this would have a

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BRAINSTORMING AT McGILL: THE IMPLICATIONS OF LIFE-EXTENSION RESEARCH

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Dr. Leigh Turner, Dr. Kathleen Glass and Bioethics M.A. candidate Myriam Brouillet organized the project meeting, *Extending the Human Lifespan: Ethical, Legal, and Social Issues*, to bring researchers from different disciplines together to consider the potential consequences of life-extension research. Guests from all over North America came to the meeting, which was generously funded by *Génome Québec*.

The desire to extend one's life – or even become immortal – is an ancient one, the pros and cons of which have been explored in many mythological, biblical and folk stories. The meeting served as a contemporary forum informed by these past debates but with previously unimagined possibilities on the horizon. Both high-tech means of extending life, such as genetic manipulation and making artificial organs, as well as low-tech possibilities, like caloric restriction, are currently being investigated.

Though there are many caveats, some fears about extending human life are overblown. For example, opponents of life-extension research argue that if humans live longer, social institutions such as marriage and family may be shattered. But it is unlikely we will suddenly be offered a magic pill that would add 50 years to our lives. Dr. Siegfried Hekimi of McGill, renowned for his ground-breaking genetics work on the nematode *C. elegans*, maintained that instead, gains to life expectancy will be made in small increments, continuing the one hundred year trend of increased life expectancy in developed countries. Dr. Christine Overall of Queen's University, a feminist philosopher, pointed out that society was able to adapt to these past incremental gains, so it is reasonable to expect we will adapt to future gains, too.

Another issue brought up by several participants, such as Dr. Carl Elliott of the University of Minnesota, was that it seemed almost grotesque to be talking about

life-extension research when so many millions of people die every year of preventable diseases and starvation. Other participants countered that the issue then was not the life-extension research per se, but rather the socioeconomic inequality that causes this disparity between the rich and the poor. We still have time to try and ensure that when scientific breakthroughs allow for longer, healthier lives, this boon will be shared more equitably.

Given the rich and animated (at time, heated) discussions, Drs. Turner and Glass hope to hold another meeting this fall.

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beneficial influence on clinical practice.”

Much of her own research to date has concerned aging and psychiatric disorders, and now she would like to investigate how the social environment and genetics interact and impact on the aging process. She is presently studying how social class may modify the aging process and longevity. “Do people age at different rates based on the social and physical environment in which they are born and raised, and/or how much does the adult environment contribute to differential rates of disease and mortality?” wonders Dr. Fuhrer. “Is aging just the interaction between social and environmental stressors? How do these stressors interact with genetic predisposition?” These are tough and intriguing questions, but Dr. Fuhrer is up for the challenge.

POLICY AND POLITICS

PLANNING TO RETIRE AT 65? YOUR COMPANY MAY NEED YOU.

by Alison McTavish

Despite a growing shortage of skilled workers, a new report claims that companies are not doing nearly enough to encourage older workers to stay in the workforce. The report, entitled *Valuing Experience: How to Motivate and Retain Mature Workers*, was published by The Conference Board, a non-profit group that helps businesses to improve.

The report is based on the responses of 150 senior human resource executives from the United States and other industrial nations. Almost 71% of respondents said that an aging workforce is either a very important or fairly important business issue in their companies because of approaching skill and talent shortages.

During the 1990s there was a steep decline in the number of mature-age employees. Although this decline has slowed in recent years, the aging baby boomers are beginning to increase the number of people in this age group. As the baby boomers retire, there will be growth in the number of mature-age people who are not employed.

For the financially secure, retirement may be welcomed, but the less well off can face serious financial difficulty. After decades in the workforce, many retirees face both psychological and social problems. Retirement is also a growing problem for government and industry. Many older people may have to depend on social security, and many industries are losing their most skilled employees.

Why do older people leave the workforce?

Older adults leave the workforce for a number of reasons, including lack of skills in new technology, work experience in declining industries, poor relationships with younger employees and supervisors, and disabilities and caring responsibilities that limit their employment options.

Although some mature age men and women are financially secure enough to take voluntary early retirement, many get laid off and then leave the labour force entirely because of reluctance among employers and employment agencies to recruit older employees. Downsizing companies may find it easier to let older workers go, not necessarily because they have lower productivity, but because early retirement packages and social attitudes make it easier to lay off older rather than younger workers.

In addition, some older employees feel that they are not sufficiently challenged at

work. According to the Conference Board report, 17% of human resource executives admitted providing older workers with fewer chances at promotion, and 11% said they give older workers fewer challenging assignments.

What can companies do?

Companies are failing to forecast realistic retirement rates and put little emphasis on keeping their employees despite clear evidence of an aging population. Many companies are not actively encouraging skilled, experienced employees nearing retirement age to stay on the job.

Among survey participants, 66% reported that their companies don't have an age profile of their workforce, suggesting that they are not sure exactly how retirements will affect their business. More than 63% have no inventory of available skills, and 49% fail to assess their companies' training and development needs.

Flexibility and alternative work arrangements are a good way of retaining or recruiting mature workers. Shorter work weeks, telecommuting, and job sharing help balance personal and professional demands. Flexible schedules and telecommuting are already a good way of encouraging people to stay in the workforce. They also provide a smooth transition to gradual retirement; employees get a taste of retirement while keeping their workplace contacts and companies can still rely on skilled workers.

Older workers that responded to an earlier Conference Board survey wanted more training and leadership development opportunities, preferring job enrichment to increased duties. However, companies may need to modify their training practices for mature workers to cater to older employees.

Older, experienced employees also play an essential role in transferring knowledge and skills to younger people. Some companies rehire retirees on a part-time or temporary basis to help train younger workers. However, only 5% ask veteran employees to mentor younger ones as part of their jobs, even though this demonstrates that the company values experience and would like to see their knowledge passed on to others.

As the baby boomers continue to age and retire, companies will be forced to re-evaluate their emphasis on younger employees, and will have to do more to

entice older, more experienced employees to stay. Their business may well depend on it.

According to the Conference Board, "employers' ability to recognize and respond to the diverse needs of mature workers will deter these workers from leaving the workforce prematurely, foster a workplace that is appreciative of employees of all ages, and build a sustainable workforce that transcends retirement."

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DID YOU KNOW...?

HEART DISEASE: THE NO. 1 KILLER OF WOMEN (J.C.)

The 28 April cover feature of TIME magazine reminds us that cardiovascular disease kills 500,000 US and 40,000 Canadian women per year. Many women worry about breast cancer, but heart attacks kill 6 times more women each year. Both sexes can reduce the risk of heart disease by not smoking, losing weight if one is overweight, lowering cholesterol, controlling blood pressure and reducing stress.

Source: Gorman, C. *The No.1 Killer of Women*. TIME, 161(17); 42-48 (28 April 2003).

See also: <http://www.womenheart.org/> and <http://www.nhlbi.nih.gov/health/hearttruth/>

A CANADIAN PERSPECTIVE ON PREVENTING STROKE (J.C.)

A clinical approach to stroke prevention usually emphasizes diagnosing individual patients at high risk and then treating them intensively, while a population approach focuses on the entire population and bases interventions on behavioural and environmental changes. After reviewing the

literature and online statistical data, the authors conclude that clinical and population approaches to stroke prevention are complementary. They predict that implementing existing national strategies directed at the promotion of healthy life-styles (especially physical activity) and hypertension control will reduce the frequency and severity of stroke in Canada.

Source: Young TK, Hachinski V. *The population approach to stroke prevention: a Canadian perspective*. Clin Invest Med;26(2):78-86(April 2003).

SMELLING OUT TROUBLE (J.C.)

Persons with chemosensory problems, especially those who live alone, are more at risk of both nutritional problems and danger from fire or gas explosions. But up until recently, the prevalence of olfactory impairment in seniors had not been studied. It turns out the prevalence is high indeed: 24.5% of people over age 53 and 62.5% of 80 to 97 year olds had olfactory impairments. Since self-report radically underestimated actual prevalence of olfactory impairment, physicians and caregivers should be particularly alert to the potential for olfactory impairment in seniors.

Source: Murphy, C., Schubert, C.R., Cruickshanks, K.J., et al. *Prevalence of Olfactory Impairment in Older Adults*. JAMA, 288(18): 2307-2312 (2002).

DETECTING DELIRIUM (J.C.)

Delirium is associated with poor outcomes. It is common and often goes undetected in older patients admitted to hospital. Researchers at McGill University and the Université de Montréal conducted a randomized clinical trial to see if systematic detection and multidisciplinary care of delirium in older patients admitted for medical services could reduce the time it takes to improve cognitive status. They found their intervention was no more effective than standard care.

Source: Cole, M.G., McCusker, J., Bellavance, F., et al. *Systematic detection and multidisciplinary care of delirium in older medical inpatients; a randomized trial*. CMAJ, 167(7): 753-9 (2002).

POPULAR SUPPLEMENT FAILS TO SHOW BENEFIT FOR ALZHEIMER'S (A.M.)

The supplement dehydroepiandrosterone, or DHEA, has been publicized as an anti-aging hormone and a treatment for diseases such as cancer, AIDS, diabetes and Alzheimer's disease. However, according to a study published in the journal *Neurology*, it showed no effect for Alzheimer's disease in patients who took the supplement for six months. Side effects occurring more often in the patients taking DHEA included confusion, agitation

and anxiety. The study was limited to patients who were not taking Alzheimer's drugs, and the authors suggest that DHEA should be tested in combination with these drugs to see whether it can enhance their effect.

NEW METHODS FOR REJUVENATING AGING SKIN (A.M.)

New skin rejuvenation methods that treat common signs of aging, such as wrinkles, mottled skin tone and broken blood vessels, were presented at the American Academy of Dermatology's recent Annual Meeting. Photomodulation is a non-invasive procedure that works by activating skin cells with pulses of low-level, non-thermal light energy. One week after the last treatment, recipients experienced a 62% global improvement in the appearance of skin in the eye area, reduced skin roughness, pore size, and redness. A second method, photorejuvenation, repairs collagen in the dermis, or deepest layer of the skin. This treatment delivers pulses of light to the dermis, which injures and then repairs the existing collagen. Since the top layer of skin is rarely injured by this treatment, there are no visible signs that the skin is being rejuvenated as is common with other procedures.

UMBILICAL CORD CELLS COULD HELP STROKE PATIENTS (A.M.)

Blood cells from human umbilical cords could help restore the function of nerve cells after a stroke. Findings presented at the recent American Academy of Neurology meeting showed that injecting cultured cells from human umbilical cord blood into the carotid artery of rats immediately after a stroke improved sensorimotor function. Additionally, functional recovery occurred significantly sooner in cell-treated rats than in untreated rats. Umbilical cell therapy could be a potential new therapy for human stroke victims.

McGILL CENTRE FOR STUDIES IN AGING

6825 Lasalle Blvd.

Verdun, Québec H4H 1R3

Tel.: (514) 766-2010 / Fax: (514) 888-4050

E-mail: mcsainfo@po-box.mcgill.ca

Website: <http://www.aging.mcgill.ca>

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TRANSLATION

Lacoste Royal

LAYOUT AND PRINTING

Imprimerie Miro inc.

WE THANK NOVARTIS
FOR THEIR GENEROUS SUPPORT TO
THE GERONTO-McGILL.