MANAGING BLADDER DYSFUNCTION IN MS

Bladder dysfunction is very common in persons with multiple sclerosis (MS), with approximately two thirds of people with this condition enduring this symptom on an ongoing basis. Up to 90% of persons with MS experience it sometime during the course of their illness. Urinary symptoms are distressing, disruptive to all areas of an individual’s life—including vocational, social, and sexual activities—and, occasionally, disabling.

The motor and sensory pathways to the bladder are affected by MS plaques in the spinal cord and brain, resulting in neurogenic bladder dysfunction. “Getting an accurate diagnosis of the type of dysfunction being experienced is an essential first step,” said Marie Namey, RN, MSN, of the Mellen Center for MS Treatment and Research at the Cleveland Clinic. “Listing symptoms or having individuals describe their bladder difficulties does not always pinpoint the problem.” The initial screening for any type of urinary complaint is to rule out urinary tract infection (UTI), followed by measurement of post-void residual (PVR) volume.

CATEGORIES OF URINARY DYSFUNCTION

MS commonly interrupts the transmission of signals to and from the brain that keeps urination under voluntary control. As Ms. Namey observed, “We know, simplistically, that the neurogenic bladder dysfunction resulting from disrupted nerve signals leads to three forms of difficulty: inability or failure to store urine, incomplete emptying of the bladder, or a combination of both problems as a result of detrusor-sphincter dysynergia [DSD].” She spoke at the Consortium of Multiple Sclerosis Centers symposium held May 31–June 3, 2001 in Fort Worth, Tex.

Failure to Store

Ms. Namey explained that a problem with urine storage occurs when the detrusor muscle is overly active; bladder contractions occur involuntarily when only a small amount of urine has collected. (Individuals who experience failure to store tend to have a small PVR—less than 60 cc.) The outlet sphincter opens in a normal
Incomplete Emptying

“Incomplete emptying of the bladder is a common scenario in MS,” Ms. Namey said. In this case, the urethra is blocked by a spastic or tight sphincter that prevents the bladder from emptying completely. This is usually a component of DSD, in which the urinary sphincter contracts.” A different kind of medication, 1-desamino, 8-[D] arginine vasopressin (DDAVP®, desmopressin) works by suppressing the amount of urine produced by the kidneys, which may help individuals with nocturia; however “the downside of DDAVP is that it may cause edema in the lower extremities,” she noted.

When people first lose bladder control, they may try to self-treat by using absorbent pads and protective undergarments or restricting intake of fluids, which may actually make the problem worse by irritating the bladder and increasing the risk of infection. People with bladder problems related to MS are advised to drink six to eight glasses (48 to 64 ounces) of fluid every day, with intake spread over the waking hours and ending about two hours before bedtime.

Drinking cranberry juice may be helpful to increasing the acidity of urine and thereby reducing the incidence of urinary tract infection. “Caffeine, alcohol, and aspartame in food or beverages should be avoided because they tend to irritate the bladder,” Ms. Namey stressed. She also emphasized that while protective pads and undergarments may be useful adjuncts to treatment for those with incontinence, they should not be used as a substitute for pharmacotherapy.
stricts rather than relaxes when the detrusor muscle contracts to push out the urine.

The urine stream may be weak or intermittent and difficult to start. Some urine is usually eliminated, but a significant amount may remain in the bladder, causing symptoms of semi-urgency and frequency of urination, hesitancy when initiating urination, nocturia, and frequent UTIs. The bladder may also become overfull, leading to overflow incontinence, or “dribbling.” Chronic urinary retention and subsequent UTIs may result in kidney inflammation, bladder or kidney stone formation and, ultimately, kidney damage.

Some people with a mild problem with emptying and a relatively small PVR may respond well to treatment with anti-spasticity drugs, such as baclofen (Lioresal®) or tizanidine (Zanaflex®), or to alpha blockers (eg, doxazosin [Cardura®]); however, when bladder scans, bladder ultrasound tests, or diagnostic catheterization show a large PVR, the most effective treatment is generally intermittent catheterization.

**Combined Dysfunction**

Combined bladder dysfunction exhibits features of both storage and emptying disorders, with DSD being the primary cause. “The use of anticholinergic drugs and intermittent catheterization are the best remedies in combined bladder problems,” Ms. Namey stated. “But perhaps the most important consideration in bladder management for any form of dysfunction is recognizing what an individual finds most troubling about his or her bladder problems.” She explained that some people are not concerned by double voiding during the day; others are very upset by having their sleep disturbed by nocturia.

**PATIENT ASSESSMENT AND EDUCATION**

“It’s important to assess both physical bladder function and a person’s willingness to learn a new intervention for managing bladder problems,” Ms. Namey observed. This may be accomplished by employing the relevant clinical tests and obtaining an accurate patient history. “We may need to explain the physiology of the bladder, perhaps using balloons to demonstrate bladder capacity.

“We must educate persons with MS about the strategies of medication, management, and self-help that will control bladder symptoms successfully. We must show them how to recognize the symptoms of UTIs and the impact these infections may have on their disease.” She explained that UTIs frequently cause increased spasticity and fatigue, exacerbation of other MS symptoms, and changes in bladder function.

Ms. Namey underscored the need for teaching individuals with bladder problems about the importance of clothing that can be easily undone, the layout of their home environment (having bathrooms conveniently located and easily accessible for those who experience motor difficulties), and the timing of their fluid intake as related to scheduled spontaneous voiding or intermittent catheterization. “A good understanding of the problems and the potential solutions may help people come to terms with this upsetting issue,” she concluded.

**The Impact of Balance on Disability and QOL in People With MS**

Difficulty with balance is a serious problem that often affects quality of life (QOL) for individuals with MS. The simple act of putting one foot in front of the other to walk may not be so simple for patients whose unsteadiness may lead to a fall at any time or whose fear of falling limits their activities and virtually holds them captive.

“Impaired balance is a very common and disabling symptom for those with MS,” said Kathy Dieruf, PhD, PT, NCS, who is an Assistant Professor in the Physical Therapy Program at the University of New Mexico in Albuquerque. “The painful consequences of prior falls or current fear of falling may lead to a devastating downward spiral of decreased activity, decreased strength and endurance, diminished range of motion, and subsequent increased impairment that may actually add to the risk for falling.” She noted that both falls and the fear of falling have a significant impact on an individual’s ability to perform the activities of daily living; they may also result in self-imposed curtailment of vocational or recreational activities as well as limited social interaction.

Because difficulty with balance infringes upon all aspects of a person’s life, Dr. Dieruf and colleagues at the MS Specialty Clinic of New Mexico are studying the relationship of illness severity and QOL in persons with MS who experience impaired balance. This ongoing investigation is using the following as measures of...
both actual and perceived disability: the Expanded Disability Status Scale (EDSS), which is designed to follow overall course of a disease outcome or treatment; the Falls Efficacy Scale (FES), a subjective measure of self-efficacy as it relates to the fear of falling; and the Berg Balance Scale (BBS), an objective measure of balance. QOL is being gauged by the Multiple Sclerosis Quality of Life-54 (MSQOL-54), with scoring for items that appear on the 36-Item Short Form Health Survey (SF-36) segregated to allow comparison with national norms.

The study cohort consists of 82 volunteers who have been diagnosed with clinical MS and who have EDSS scores that currently range from 0 to 6.5, with an average score of 3.1. Of this group, 81% are female, 65% are married, 39% are employed either full- or part-time, and 42% are using an assistive device at least occasionally. Sixty-two percent of the subjects are Caucasian, 11% are Hispanic, 3% are African-American, 1% are Asian, 1% are Native-American, and 22% categorized themselves as “other” in ethnicity. Their average age is 45.6 years.

The study participants were first assessed by a physician in the MS Specialty Clinic to determine an EDSS score; then they were asked to complete a short survey form that asked about their disease course, their symptoms, and any sensory deficits they were experiencing. They were also asked if they ever fall or lose their balance; how often that occurs; if they usually manage to compensate for loss of balance or actually fall each time; if they ever use an assistive device and, if so, what type. Following this, they underwent balance tests, such as the BBS, and completed more directed questionnaires, including the FES and the MSQOL-54.

The FES measures an individual’s confidence in his or her ability to perform 10 basic activities, such as shopping, housecleaning, bathing, or rushing to answer the telephone, without falling. Individuals rate themselves on a scale of 0 (not confident at all) to 10 (completely confident), with a possible total score of 100. The BBS comprises progressively more difficult physical actions of varying duration to determine a person’s ability to complete such actions independently. Individuals are rated by a clinician on their ability to perform these actions, using scores from 0 (not possible/needs assistance) to 4 (able to complete actions independently) with a possible total score of 56. “Our study subjects had an average score of 74 on the FES and an average score of 48.1 on the BBS,” Dr. Dieruf related.

Comparing totals from the SF-36 items included in the MSQOL-54 with norms for the healthy US population, it is not surprising that the study cohort scored significantly lower in all domains. “However,” Dr. Dieruf added, “their overall QOL is also lower than that of most people with other chronic diseases.” Their results were typical of those scored by people with MS who have participated in other studies.

Dr. Dieruf and colleagues further analyzed the relationship of SF-36 physical and mental summary scores to EDSS scores, FES scores, and BBS scores in the cohort. They found that as EDSS scores increased, which indicated greater disability, there was a corresponding negative change in SF-36 physical summary scores as well as in those for the FES and the BBS; however, they found no correlation with SF-36 mental summary scores. Of the physical domains of the SF-36, role-physical returned the lowest scores, but changes in physical functioning appeared to hold the most significance for patients. These results were mirrored in the FES and the BBS.

The most notable relationship was that of the physical health summary score and the FES. This indicated that an individual’s perception of balance is perhaps more important than the actual measured balance deficits. QOL is a complex, subjective construct that may be influenced by a number of factors, and certainly, the participants’ perception of balance, disease severity, and degree of disability all contributed to the overall quality of their lives. The BBS, the FES, and measures of QOL all provided a store of information that added to the facts supplied by EDSS scores, and which can then be used to adjust treatment plans or monitor outcome.

“As a physical therapist, we need to look at the impact that impaired balance has on an individual’s ability to function and at the role it plays in overall QOL,” Dr. Dieruf emphasized. “If we can address the issue of balance early in the course of MS, using appropriate therapy in the form of aerobic exercise, stretching, a program of vestibular exercises, or even assistive devices, we may well be able to improve safety, the ability to function and at the role it plays in overall QOL.”

Because this study is ongoing, Dr. Dieruf and colleagues will continue to collect data from a cohort of increasing size and to expand the focus of their research. This will allow them to perform a multiple regression analysis of the variables related to each of the instruments that measure disability, balance, and QOL and to determine the exact contribution of each, their interrelationship, and their consistency in findings. The researchers also plan to investigate other domains of the MSQOL-54 that were not evaluated in the current study.
Multiple Sclerosis Nursing in 2001: A Global Perspective

**Update on MS Nurse Credentialing**

The implementation process for the credentialing of multiple sclerosis (MS) specialist nurses has been brought closer to its goal. The Multiple Sclerosis Nurses International Certification Board (MSNICB, see Table) has determined the date for the initial certification examination. It will precede the June 4, 2002 joint meeting, in Baltimore, of the Consortium of Multiple Sclerosis Centers (CMSC), the International Organization of MS Nurses (IOMSN), the Latin American Committee for Treatment and Research in MS (LACTRIMS), and the Rehabilitation in MS (RIMS) organization. “We expect all components of MS nurse certification to be in place by March 2002, at which time registration for the first examination will be open to all nurses who qualify and who wish to participate,” said Heidi W. Maloni, RN, MSN, CNRN, CRNP, the primary organizer of the MSNICB.

Ms. Maloni has been at the forefront of the lengthy and arduous preparatory activities that include identifying MS nursing domains, developing a core curriculum for nurse education, composing a fair and balanced written examination, determining eligibility requirements, registering a trademark for the credential, and numerous additional tasks entailing significant time and effort. “As part of the preparation, the MSNICB has also compiled a candidate’s handbook outlining the decisions of the certification board and explaining all the steps necessary to obtain certification,” she related.

A major objective was reached when the MSNICB engaged an accredited testing company to fulfill the administrative services related to the test itself. The Professional Testing Corporation, which oversees certification testing for nearly 60 medical and professional organizations and which guarantees the validity and reliability of the MS nurse certification test, will be responsible for the following:

- printing and distributing a marketing brochure
- printing and distributing a brochure and test application form for MS nurses
- printing the test
- setting up test sites
- collecting the fees
- providing proctors to monitor test sessions
- grading completed tests using a computerized system

Ms. Maloni noted that the test would be specific to the domains of MS nursing, which were originally defined by the MS Nurse Specialists Consensus Committee in the monograph *Multiple Sclerosis: Best Practices in Nursing Care* and later refined by the MSNICB. “Sixty-five percent of the exam questions will be focused on clinical practice, 13% on advocacy, 15% on education, and 7% on research,” she advised. “Also, the exam will consider regional and cultural bias.”

The initial exam will be limited to English-speaking MS nurses, but “by the next scheduled offering of the certification test in November 2002, it will have been translated into French, Dutch, Italian, Spanish, and other languages,” Ms. Maloni stated. She added that the MSNICB is working on an item analysis—with input from MS nurses from different nations—that will allow inclusion of questions specific to MS care in a given country when nurses from that region are being tested. “This is necessary because parameters of clinical practice, health care insurance, drugs available for treatment, and funding for research may vary from nation to nation,” she explained. “Even the number of questions to be included in the exam and the time that must be devoted to completing it were decided by consensus of MS nurses worldwide.”

When asked how she felt about the time and effort that has been invested in MS nurse credentialing, the interim results, and the foresee-
able outcome, Ms. Maloni replied, “I’ve been very heartened by the enthusiasm for this effort expressed by the majority of nurses I’ve met. There has been an enormous amount of cooperation, and many MS organizations and nurses have offered suggestions and input that have been gratefully accepted. The fact that nurses are empowered by this process is wonderful,” she emphasized.

### Table. Members of the Multiple Sclerosis Nurses International Certification Board

<table>
<thead>
<tr>
<th>Name</th>
<th>Location, Organization</th>
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<tbody>
<tr>
<td>Cira Fraser, RN, CS, PhD</td>
<td>Graduate Faculty, Monmouth University, West Long Branch, NJ; clinical practice in MS care at Maimonides Medical Center MS Care Center, Brooklyn, NY</td>
</tr>
<tr>
<td>Jocelyne Frenette, RN, MSN</td>
<td>Faculty of Medicine, Sherbrooke University Nursing Program; MS Clinic Coordinator, CHUS-Hôpital Fleurimont, Fleurimont, Quebec</td>
</tr>
<tr>
<td>Marco Heerings, RN, MSN, NP</td>
<td>Nurse Practitioner, Multiple Sclerosis Center, Groningen University Hospital, Groningen, Netherlands</td>
</tr>
<tr>
<td>Michelle Keating, RN, OCN</td>
<td>Nurse Educator, St. John’s Mercy Medical Center, St. Louis, Mo</td>
</tr>
<tr>
<td>Beverly Layton, RN</td>
<td>Clinical Research Nurse Coordinator, University of Alabama, Birmingham</td>
</tr>
<tr>
<td>Heidi Maloni, RN, MSN, CNRN, CRNP</td>
<td>Patient Advisory Board, National Multiple Sclerosis Society; Teaching Assistant, Community Public Health Nursing, Catholic University of America, Washington, DC; Coordinator, Multiple Sclerosis Nurses International Certification Board</td>
</tr>
<tr>
<td>Amy Perrin-Ross, RN, MSN, CNRN</td>
<td>Neuroscience Program Coordinator and MS Center Coordinator, Loyola University Medical Center, Maywood, Ill; Consultant, National Multiple Sclerosis Society</td>
</tr>
<tr>
<td>Suzanne Smeltzer, RN, EdD, FAAN</td>
<td>Associate Professor and Project Director of Health Promotion for Women With Disabilities Project, Villanova University College of Nursing, Villanova, Pa</td>
</tr>
<tr>
<td>Nicki Ward, RN</td>
<td>Lecturer-Practitioner in Multiple Sclerosis, University of Central England, United Kingdom</td>
</tr>
<tr>
<td>Judy Wollin, RN, PhD</td>
<td>Tenured Lecturer, School of Nursing, Queensland University of Technology, Queensland, Australia</td>
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### Telephone Care Study Reveals Pattern in Outpatient MS Clinic

A recent study looked into the type, frequency, and duration of telephone patient encounters in an MS clinic. While nurses at the University of Calgary MS Clinic in Alberta handled almost 11,000 patient-related telephone calls between September 1, 1999 and August 31, 2000, the type and frequency of issues, and the duration of the interactions were not known. Since nurses at this clinic process such a high volume of calls and spend close to 50% of their time on this function, Colleen Harris, RN, MN, Nurse Coordinator at the University of Calgary MS Clinic and colleagues investigated all patient-related telephone encounters that occurred over a four-month period. The researchers used a checklist that included 10 call types and three duration categories to do their monitoring.

### Call Categories Provide Insights

The researchers found a consistent pattern in the results over the entire study period. A minimum of 30% of each month’s encounters were related to the category of disease modifying therapy; psychosocial issues followed with an average of about 15%; next came symptom management with close to a 14% average. Other categories noted were relapses, employment and disability concerns, calls from a physician or other professional regarding patient care, queries about medications other than disease modifying therapy, complementary therapy inquiries, appointment and test results encounters, and referrals to professionals outside of the MS program.

With regard to call duration, 25% of symptom management calls and 30% of relapse calls lasted between 11 and 20 minutes. Over 80% of the encounters in other categories lasted 10 minutes or less. The remainder of the calls lasted more than 20 minutes.
IOMSN Update

According to the researchers, the information gathered in this study will help them to focus on developing the health care services and education necessary to serve the needs of the persons with MS in their region.

Poster Wins Labe C. Scheinberg Award
At the annual Consortium of Multiple Sclerosis Centers (CMSC) meeting in Fort Worth, Tex, this past spring Ms. Harris and colleagues were recipients of the prestigious Labe C. Scheinberg Award for the poster that describes this study. The award, which was given for Best Poster in Neurorehabilitation, is named for Labe C. Scheinberg, MD, a well-known neurologist and one of the CMSC founders. As part of this honor, the researchers have been provided with an expense-paid trip to a Rehabilitation in Multiple Sclerosis meeting in Europe to present their poster.

How Your MS Nursing Colleagues View the New Criteria

MS Exchange asked MS nurses in the United States (Kathleen Costello, Baltimore; Marie Namey, Cleveland; Amy Perrin-Ross, Maywood, Ill; and Julie Saunders, Portland) and abroad (Lynn McEwan, London, Ontario, and Bernadette Porter, London) for their reactions to the new diagnostic criteria for MS. Most agreed that the biggest change from the 1982 criteria is the importance of the role of magnetic resonance imaging (MRI) in diagnosing MS. As Ms. Namey stated, “These new criteria reflect the emphasis on MRI to demonstrate dissemination of lesions in space and time. [As a result] these new criteria may eliminate the misdiagnosis of MS in some individuals.” Ms. Porter added that the criteria “will be particularly helpful for the management of the earliest disease stages.” Ms. Perrin-Ross praised the new categories of MS diagnosis—MS, possible MS, and not MS—for doing away with “a lot of gray areas that previously confused clinicians and patients.” Ms. McEwan concurred, calling the new categories “more clear and concise” and preferable to the older clinical definite MS (CDMS) and laboratory-supported definite MS. Ms. Namey and Ms. McEwan, however, pointed out that many areas of similarities remain between the two sets of criteria.

As Ms. Namey noted that uncertainty about diagnosis is not eliminated, and the period of uncertainty is “a time when MS nurses need to continue to support and educate people with MS and their families. It is very important that a good trust relationship exists between the health care provider and the person with MS.”

Ms. McEwan expressed the hope that the new criteria will ensure an accurate diagnosis. As she explained, “Over the past year, I have seen an increase in the number of misdiagnoses: People are given a diagnosis of MS based on a few nonspecific, white matter lesions found on MRI. This poses significant implications for the person and for the MS team. Some people are more devastated to learn that they do not have MS or only possible MS. Eliminating the MS diagnosis puts them back at the stage of diagnostic uncertainty—wait, worry, and wonder.” Ms. Saunders and Ms. Porter said that persons with MS may be able to start treatment sooner, thereby lessening complications associated with advanced MS. Ms. Saunders noted that earlier treatment may result in more families in their childbearing years “facing difficult and important family-planning decisions.”

Delayed diagnosis presents another concern—delayed treatment—for those people who do have MS. As
New Criteria for Diagnosis of MS

The International Panel on MS Diagnosis, under the guidance of the National Multiple Sclerosis Society and the International Federation of MS Societies, convened in London during July 2000 to revise the diagnostic criteria for MS. It has been nearly two decades since the criteria for MS diagnosis were considered for update.

Throughout the past 20 years, knowledge of MS has greatly increased, prompting the need for changes in disease categories, and for integrating magnetic resonance imaging with other diagnostic methods. The Panel also clarified specific definitions used in the diagnosis of MS (see Table).

The authors of the guidelines emphasize that the diagnosis “is best made by an expert who is familiar with the disease, its differential diagnoses, and the interpretation of paraclinical assessments (imaging, cerebral spinal fluid analysis, and evoked potentials) that can supplement the diagnostic process.” The complete article, “Recommended Diagnostic Criteria for Multiple Sclerosis: Guidelines from the International Panel on the Diagnosis of Multiple Sclerosis,” appears in the July 2001 issue of the Annals of Neurology, Volume 50, pages 121 to 127.

Table. Diagnostic Criteria

<table>
<thead>
<tr>
<th>Clinical Presentation</th>
<th>Additional Data Needed for MS Diagnosis</th>
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| Two or more attacks; objective clinical evidence of two or more lesions | None*
| Two or more attacks; objective clinical evidence of one lesion | Dissemination in space, demonstrated by MRI² or Two or more MRI-detected lesions consistent with MS plus positive CSF or Await further clinical attack implicating a different site
| One attack; objective clinical evidence of two or more lesions | Dissemination in time, demonstrated by MRI³ or Second clinical attack
| One attack; objective clinical evidence of one lesion (monosymptomatic presentation; clinically isolated syndrome) | Dissemination in space, demonstrated by MRI⁴ or Two or more MRI-detected lesions consistent with MS plus positive CSF and Dissemination in time, demonstrated by MRI⁴ or Second clinical attack
| Insidious neurological progression suggestive of MS² | Positive CSF and Dissemination in space, demonstrated by: 1) Nine or more T2 lesions in brain or 2) Two or more lesions in spinal cord, or 3) Four to eight brain lesions plus one spinal cord lesion or Abnormal VEPe associated with four to eight brain lesions, or with fewer than four brain lesions plus one spinal cord lesion demonstrated by MRI and Dissemination in time, demonstrated by MRI⁴ or Continued progression for one year

If criteria indicated are fulfilled, the diagnosis is multiple sclerosis (MS); if the criteria are not completely met, the diagnosis is “possible MS”; if the criteria are fully explored and not met, the diagnosis is “not MS.”

*aNo additional tests are required; however, if tests [magnetic resonance imaging (MRI), cerebral spinal fluid (CSF)] are undertaken and are negative, extreme caution should be taken before making a diagnosis of MS. Alternative diagnoses must be considered. There must be no better explanation for the clinical picture.

*b MRI demonstration of space dissemination must fulfill the criteria derived from Barkhof et al, 1997, and Tintore et al, 2000. See Table 1 in original article.

*Positive CSF determined by oligoclonal bands detected by established methods (preferable isoelectric focusing) different from any such bands in serum or by a raised IgG index.

*MRI demonstration of time dissemination must fulfill the criteria listed in Table 2 in original article.

*Abnormal visual evoked potential (VEP) of the type seen in MS (delay with a well-preserved wave form).

According to results of a study designed by the Italian MS Society to assess the feasibility of instituting an interdisciplinary approach for treating people with multiple sclerosis in Italian MS clinics, a number of issues act as obstacles to establishing this model of care. Insufficient numbers of allied health care professionals relative to the number of neurologists and a disproportionate distribution of MS health care providers in relation to the geographic regions where MS is most prevalent appear to be the two largest stumbling blocks.

“The Italian MS Society wanted to learn the current situation in terms of organizational structure for Italy’s MS clinics, to discover where inconsistencies might lie among clinics, and to determine the practicability of the goal of interdisciplinary care for those with MS in each treatment center,” said Michele Messmer Uccelli, BA. Ms. Uccelli spoke at the Consortium of Multiple Sclerosis Centers symposium held May 31–June 3, 2001 in Fort Worth, Tex. She explained that owing to Italy’s system of socialized medicine, no one really knows the exact number of, or classifications for, health care professionals working in MS clinics, nor are their roles clear in patient care.

“We sent a questionnaire to each of 147 neurology departments affiliated with MS clinics throughout Italy. The questionnaire was composed of segments that focused separately on the characteristics and organizational structure of the clinic, the number and types of health care providers who were employed at the facility, and the resources that were needed.”

The study analysis included usable questionnaires from 102 MS clinics, for which the head physician at each treatment center had compiled the answers. Fifty of these clinics were located in the northern part of Italy, 22 were in the central region, and 30 were in the southern portion.

From the responses, it was determined that the total number of health care professionals working in the majority of Italian MS clinics was 823. Fifty percent (412) were neurologists, 28.7% (236) were nurses, 15.1% (124) were physical therapists, 3.4% (28) were psychologists, and 2.8% (23) were social workers. The number of neurologists employed at MS clinics was divided almost equally between the northern and southern regions of the country, even though the number of people being treated in northern MS clinics was nearly double that in southern MS treatment centers (53% vs 29%, respectively). The distribution of physical therapists in MS centers followed a similar pattern. However, the number of nurses, psychologists, and social workers tended to be more evenly matched with the number of people being treated.

“What we learned from this questionnaire is that in some cases, health care providers in an MS clinic outnumber the people receiving care, while in others, one doctor alone, without the help of a nurse, may be responsible for treating up to 350 patients,” Ms. Uccelli related.

Adding to the difficulties in establishing a model of multidisciplinary MS care is the fact that Italy lacks a formal system of education and recognition for the allied health care professions. “There is no full university degree in nursing, and certification for physical and occupational therapists isn’t really certification as we know it,” Ms. Uccelli explained. “None of these professionals has the means or the solid base of knowledge to be acknowledged as an MS specialist.”

A neurologist who is not affiliated with an MS treatment center is not permitted to prescribe immunomodulating drugs.

“What’s Wrong With This Picture?”

“Obviously, there are problems intrinsic to socialized medicine,” Ms. Uccelli stated. In Italy, for instance, the Minister of Health decides which MS clinics will
be authorized to prescribe interferon for treatment of persons with this disease. A neurologist in private practice who is not affiliated with one of the MS treatment centers is not permitted to prescribe the immunomodulating drugs for his or her patients, and people with MS are obliged to travel to an authorized MS clinic if they opt for such treatment.

“To add insult to injury, many Italian MS clinics operate fewer than five days a week or may divide their care sessions among several neurologic disorders,” Ms Uccelli pointed out. For example, clinics may treat MS two or three days a week, then Parkinson’s disease one day, and stroke another. “The clinics may not be focused exclusively on MS care, and their allied health care providers frequently do not work full-time with persons who have MS. This circumstance limits the experience in MS care that non-physician health care providers can extract from their positions.”

Overall, Ms. Uccelli believes that Italian MS centers have obstacles to overcome before an interdisciplinary approach to MS care can be considered. Her recommendation is to increase the number of allied health care professionals in these treatment centers and to establish a formal “specialist” education structure to provide them with a sound base of knowledge in MS. “This would result in more capable professionals,” she stressed. “The merits of allied health care providers in the care of people with MS cannot be overemphasized.”

**Literature Monitor/News Roundup**

**Glatiramer Acetate Effectively Prevents New MS Lesion Formation**

Treatment with glatiramer acetate (Copaxone®) was found to significantly reduce the proportion of new lesions that evolve into black holes. This finding was reported in a recent issue of Neurology by researchers associated with the European/Canadian Glatiramer Acetate Study Group.

The study authors examined the severity of tissue damage in 1,722 new lesions from 239 patients who were randomly assigned to treatment with glatiramer acetate or a placebo and who underwent monthly magnetic resonance imaging (MRI) scans for a period of nine months. The primary outcome measure was the total number of gadolinium (Gd)-enhancing lesions—which appeared to correlate with disease activity and relapses—found on MRI scans during the study period.

This multicenter study demonstrated that persons with MS who received glatiramer acetate showed a significant reduction in the number of Gd-enhancing brain lesions detected by MRI scans. The percentage of new lesions that evolved into black holes was lower in those treated with glatiramer acetate than in those treated with placebo on MRI at seven (18.9% and 26.3%, respectively; $P = .04$) and eight (15.6% and 31.4%; $P = .002$) months after lesion appearance. Glatiramer acetate appeared to have a favorable effect on tissue disruption in MS lesions once they were formed.

**MS Society of the UK Opposes Ban of MS Drugs**

The National Institute for Clinical Excellence (NICE) has advised against funding by the National Health Service of the UK of beta interferon (Avonex®, Betaseron®) and glatiramer acetate (Copaxone®) for people with MS. In response, the MS Society of the UK has proposed an alternative that may make it possible for people with MS to continue receiving these drugs. As explained by the MS Society’s chief executive Peter Cardy, “We have outlined a proposal to [Health Secretary] Alan Milburn which would allow people meeting the criteria for the drugs to receive them while a rigorous scientific study of their routine use is made over a period of years.” The British Department of Health has agreed to meet with the MS Society to discuss the issue.

One problem identified by NICE was the considerable uncertainty about which people with MS benefit from drug therapy and for how long. To resolve these doubts, the MS Society has proposed that up to 10,000 patients who meet the clinical criteria for therapy with the beta interferons or glatiramer be prescribed the drugs and then be monitored for a number of years to determine the clinical and cost effectiveness of these agents.

According to the MS Society, NICE had made its decision without fully understanding MS or the effect of the disease-modifying drugs used to treat it. Also, NICE said that beta interferons and glatiramer acetate were too expensive compared with other treatments but did not name those treatments. Because no one knew what the immunomodulating drugs were being
from both studies, 315 women were identified as having MS: 181 with MS (127 definite and 54 probable cases) during the 18 years of follow-up in the NHS; and 134 (103 definite and 31 probable) during the six years of follow-up in the NHS II. Researchers adjusted for ancestry, area of residence in the United States, alcohol and caffeine intakes, and body mass index and found none of these factors to have a noticeable impact on the number of MS diagnoses.

Results for both groups were similar. There was an association between women who developed MS and those who were smoking four years before the diagnosis was made. Current smokers were 60% more likely than never-smokers to have MS and past smokers were more inclined than never-smokers to develop MS. Also, the likelihood of having MS grew with the amount of exposure to cigarette smoke. Women who smoked a pack a day for more than a year raised their risk of contracting MS, while the most significant increase occurred in women who smoked a pack a day for 25 years or more.

The researchers speculated as to the many possibilities for the association between smokers and MS, including nicotine’s immunosuppressive components, tobacco glycoprotein’s immunostimulation, cigarette smoke’s impact on the blood-brain barrier, and cigarette smoke’s toxic effects on the central nervous system. While the mechanisms of how smoking may be related to increased incidence of MS still remain unclear, understanding the association between smoking and the development of MS may provide valuable information about the causes of this disease.


Cigarette Smoking Associated with MS in Women

Women who smoke cigarettes are more likely than women nonsmokers to develop MS, according to results of a study published in the July issue of the American Journal of Epidemiology. Earlier studies had shown some evidence of the temporary worsening of motor functions in persons with MS after smoking, but the studies were small and the data found to be inconclusive.

This large-scale study analyzed two groups of women, the Nurse’s Health Study (NHS) that included 121,700 women (ages 30 to 35) enrolled in 1976, and the Nurse’s Health Study II (NHS II) with another 116,671 women (ages 25 to 42) enrolled in 1989. Following enrollment, all study participants were administered surveys every two years about their smoking status and health. Of the participants from both studies, 315 women were identified as having MS: 181 with MS (127 definite and 54 probable cases) during the 18 years of follow-up in the NHS; and 134 (103 definite and 31 probable) during the six years of follow-up in the NHS II. Researchers adjusted for ancestry, area of residence in the United States, alcohol and caffeine intakes, and body mass index and found none of these factors to have a noticeable impact on the number of MS diagnoses.

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CONTINUING EDUCATION CONFERENCE CALENDAR

March 16–19, 2002
34th Annual Meeting of the American Association of Neuroscience Nurses. Location: Chicago. Contact: AANN, 4700 West Lake Ave, Glenview, IL 60025-1485; (847) 375-4733; fax: (847) 375-6333; Web site: www.aann.org.

April 13–20, 2002

June 5–9, 2002
Annual meeting of the Consortium of Multiple Sclerosis Centers. Location: Baltimore. Contact: Leah Temena or Tina Trott, Consortium of Multiple Sclerosis Centers, c/o The Bernard W. Gimbel MS Center, 718 Teaneck Rd, Teaneck, NJ 07666; (201) 837-0727; fax: (201) 837-9414; e-mail: info@mscare.org; Web site: www.mscare.org/meeting/2002.html.

June 22–26, 2002

October 13–16, 2002
127th Annual Meeting of the American Neurological Association. Location: New York City. Contact: Lori Anderson, ANA, 5841 Cedar Lake Rd, Suite 204, Minneapolis, MN 55416; (952) 545-6284; fax: (952) 545-6073; e-mail: lorijanderson@msn.com; Web site: www.aneuroa.org.

November 2–7, 2002
32nd Annual Meeting of the Society for Neurosciences. Location: Orlando. Contact: Society for Neurosciences, 11 Dupont Circle NW, Suite 500, Washington, DC 20036; (202) 462-6688; fax: (202) 462-9740; e-mail: info@sfn.org; Web site: www.sfn.org.

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