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(P25) DIFFERENCES BETWEEN IFN BETA-1A 44MCG TIW AND 30MCG QW SUSTAINED TO 16 MONTHS: FINAL EVIDENCE RESULTS

The EVIDENCE trial was a randomized, multi-center, assessor blinded study demonstrating that IFN beta-1a 44mcg sc tiw (Rebif®) was more effective than IFN beta-1a 30mcg IM weekly (Avonex®) in reducing relapses and MRI activity in MS patients during 48 weeks of therapy. As the blinded portion of the study continued until all patients completed at least 48 weeks of randomized treatment, additional data beyond the 48-week time-point were available on most patients.

Mean time on study was 64 weeks for 44mcg tiw and 63 weeks for 30mcg qw. Of 339 patients randomized to 44mcg tiw, 315 (93%) continued in the study and 299 (88%) continued on treatment until study completion; 319 of 338 patients (94%) randomized to 30mcg qw completed the study and 306 (91%) completed treatment.

The proportion relapse-free was 56% for 44mcg and 48% for 30mcg (Odds Ratio=1.5, p=0.023). Annualized relapse rate was lower for 44mcg (0.54) than for 30mcg (0.65; p=0.033). Time to first relapse was 13.5 months for 44mcg and 6.7 months for 30mcg (HR=0.70, p=0.002). Mean T2 active lesion count was 0.9 for 44mcg and 1.4 for 30mcg (p<0.001); mean proportion of active scans per patient was 27% for 44mcg and 44% for 30mcg (p<0.001); and proportion of patients with no active scans was 58% for 44mcg and 38% for 30mcg (p<0.001). Persistent NAb titers ≥ 20 NU/ml were seen in 21% of 44mcg and 3% of 30mcg patients (p<0.001). Relapse outcomes were comparable regardless of NAb status, though NAb- patients had significantly fewer T2 active lesions than NAb+ patients. Clinical and MRI outcomes for NAb+ patients on 44 mcg were comparable to those for all patients on the 30mcg dose.

Liver, WBC, and injection site AEs were more frequent on 44mcg than 30mcg (p<0.005), while FLS were more frequent on 30mcg than 44mcg (p=0.031). Discontinuations due to AEs were comparable (19 on 44mcg and 18 on 30mcg)

These final results of EVIDENCE, after an average of 16 months, continue to show that Rebif® significantly reduces relapse and MRI activity compared to Avonex® without offsetting safety concerns. The results further support the benefit of increased dose and frequency of IFN administration in relapsing MS.

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(P4) INCREASED INCIDENCE OF FLU-LIKE SYMPTOMS WITH AVONEX COMPARED TO REBIF

INTRODUCTION:

Flu-like symptoms (FLS) are a feature of interferon treatment, likely due to induced cytokines, and comprise symptoms including fever, chills, rigors, myalgia, and headache. The EVIDENCE study provided an opportunity to compare FLS incidence using two distinct IFN beta-1a dose regimens.

METHODS:

Patients were randomized to IFN beta-1a, 44mcg tiw sc (Rebif®) or 30mcg IM qw (Avonex®) and treated for AN AVERAGE OF 63 weeks. Patients on 44mcg tiw, titrated dose: 20% for 2 weeks, 50% for 2 weeks and then full dose. Dose escalation is not discussed in the package insert for weekly therapy but dose escalation (50% for 2 weeks) was used in 20% of 30mcg patients. FLS events, patient number, severity and duration were recorded.

RESULTS:

152/339 (44.8%) patients on 44mcg reported 174 FLS events compared to 180/337 (53.4%) patients (210 events) on 30mcg qw ($p=0.031$). Mild events were reported by 32% of 44mcg and 34% of 30mcg patients; moderate and severe FLS affected 15% vs. 20% and 1% vs. 4% of patients. Fever and rigors were also more frequently ($p=ns$) reported on 30 mcg qw than 44mcg tiw. The mean (median) duration of FLS events that resolved ($n=96$ for 44 mcg; 92 for 30 mcg) was 71 (38) days for 44mcg and 89 (57) days for 30mcg patients with the mean duration of FLS as an ongoing adverse event (usually intermittent), reduced by 20% (33% median reduction) for 44mcg tiw. Mean (median) time to onset was 28 (11) days for 44mcg compared to 21 (1) days for 30mcg.

CONCLUSIONS:

A greater proportion of patients on IFN beta-1a (Avonex®) 30mcg qw experienced FLS than 44mcg tiw (Rebif®) patients and had more events that tend to be more severe and continue to recur intermittently for longer time intervals. This is most likely due to the fact that tiw patients dose titrate and that dosing tiw produces more sustained PD induction than qw. The combination of graded dose introduction and more sustained IFN effect, as manifest by PD induction, reduces FLS impact with IFN beta-1a in MS.

Study sponsored by SERONO, Inc.

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(P5) OUTCOMES IN MS PATIENTS UNDERGOING AUTOLOGOUS BONE MARROW TRANSPLANTATION

This poster describes outcomes in four multiple sclerosis (MS) patients up to two years following autologous hematopoietic stem cell transplantation (ASHCT) using a total-body irradiation-based regimen. This pilot study was conducted at the University of Nebraska Medical Center as part of a larger multi-site safety study coordinated by the University of Washington. MRI and CSF analyses post transplant demonstrate clear suppression of the inflammatory processes. CSF oligoclonal bands, although decreased in intensity continued to persist in identical patterns. The results from this case series demonstrate a clear disassociation of inflammation parameters and functional (MSFC) and disability (EDSS) parameters, suggesting that MS patients may benefit more from treatment at an earlier stage of the disease and with a lower level of disability. Longer follow-up is necessary to determine any durable benefit of this procedure.

Study supported by the University of Nebraska Medical Center and Nebraska Health Systems

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(P17) TREATMENT OF MULTIPLE SCLEROSIS WITH THE MONOCLONAL ANTIBODY, CAMPATH-1H

Campath-1H is a humanised monoclonal antibody that depletes T cells. We have shown that it powerfully suppresses inflammatory activity in secondary progressive multiple sclerosis (SPMS), but does not influence the mechanisms underlying established progression, axonal degeneration and cerebral atrophy. To date 36 patients with SPMS (with mean duration 12 and 4 years since onset of disease and progression respectively) have been treated with Campath-1H. Their relapse rate has remained suppressed during a mean of 7 years of follow-up but their disability has continued to progression. There were no significant infective adverse effects, but 1/3 of patients developed Graves' disease. We hypothesise that Campath-1H treatment much earlier in the course of multiple sclerosis may prevent axonal degeneration and hence the onset of progression. So we have used Campath-1H as an open-label treatment for 17 patients with aggressive RRMS within 2-3 years of disease onset. In 32 patient-years of disease before treatment, this cohort had 91 relapses (2.82 relapses/year). After treatment, and followed for 18 patient-years, only one relapse has occurred (0.05 relapses/year). We conclude that Campath-1H has greater efficacy when given during the early phase of multiple sclerosis, at a time when clinical disease activity is attributable to inflammation. The critical therapeutic issue is whether this will slow or prevent entry accumulation of disability long-term. This is being tested in a multi-centre European-US randomised trial (CAMMS223, sponsored by Ilex, San Antonio) comparing Campath-1H with Rebif 44mcg over three years in patients with relapsing-remitting multiple sclerosis of less than three years duration and EDSS less than 3.0.

Study supported by Ilex, San Antonio

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(P13) ADHESION MOLECULES AND MATRIX METALLOPROTEINASES IN CLINICALLY ISOLATED SYNDROMES

Cell surface adhesion molecules (AM) and matrix metalloproteinases (MMP) are involved in inflammatory cell infiltration into the Central Nervous System. Although changes in AM and MMP levels have been described in Multiple Sclerosis (MS) in cross-sectional studies, little is known about their expression in early stages, or temporal variations occurring during the course of disease. Here we addressed the issue of whether disease activity in patients with Clinically Isolated Syndromes (CIS) who evolve to Clinically Definite MS (CDMS) is associated with longitudinal changes in AM expression and MMP levels.

Thirty patients with CIS were evaluated at the onset of neurological symptoms and when they developed CDMS. Surface expression of LFA-1a, VLA-4 and ICAM-1 on PBMC and CSF cells was evaluated using flow cytometry. Serum and CSF concentrations of soluble VCAM-1, ICAM-1 and E-Selectin, as well as MMP-9 and MMP-2 plasma concentrations, were assayed using ELISA.

Nineteen cases developed CDMS 18 to 40 months later. Surface expression of LFA-1a and VLA-4 molecules on peripheral blood and CSF T cells and monocytes from CIS and CDMS was significantly increased compared with control subjects. Moreover, LFA-1a and VLA-4 expression was significantly higher in patients who developed CDMS compared with CIS cases. Similar changes were observed in MMP-9 serum levels. Interestingly, patients with CIS who failed to develop CDMS and were re-evaluated at the end of the observation period showed similar expression of both AM and MMP-9 serum levels. Furthermore, cases of both CIS and CDMS had significantly higher levels of CSF sVCAM and s-E-Selectin than control subjects. However, serum levels of soluble AM were similar in patients with CIS, CDMS and control subjects.

We conclude that up-regulation of adhesion molecules and MMP-9 is observed early in the course of MS, suggesting that VLA-4, LFA-1a and MMP-9 play a leading role in the evolution of inflammatory demyelinating lesions in patients with CIS who develop CDMS.

Study supported by FLENI

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(P6) THE WHEEL OF ACCESSIBILITY SYSTEMATIC INTEGRATION OF ASSISTIVE TECHNOLOGY

Assistive technology provides new windows of hope for people with progressive neurological diseases. It offers them independence in functions that have a critical impact on the quality of their lives: control of their immediate environment, interaction with the larger world around them and stimulating mental activity.

The Boston Home (TBH) has distinguished itself as a leader in the use of assistive technology to improve the quality of life of its severely disabled long term care residents. In September, 2002, TBH produced an overall Technology Plan that will lead to systematic integration of assistive technology throughout TBH's entire system of care. The Core Characteristics of that plan are: equity of access; optimal "fit" between each resident and the technology; effective utilization of assistive technology; and economic feasibility. "The Wheel of Accessibility" is a diagrammatic representation that places the resident's particular access issue (e.g. needs while in bed, needs while in wheelchair, etc.) at the hub. Concentric circles indicate capacity to access progressively moving to outer circles to control more aspects of their environment and/or progressively moving to access more distant individuals, groups, places. The technology assisted independent activities fall into four realms: Communication; Personal Comfort; and Intellectual, Creative or Recreational Engagement; and Mobility and Access.

The diagram is a useful tool to establish a baseline inventory of needs, to progressively introduce new devices within a hierarchy of needs, and to measure outcomes.

Study supported by the Boston Home Technology Committee

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(P8) DEVELOPMENT OF AN MS CENTER GUIDEBOOK FOR PATIENTS AND FAMILIES AFTER DIAGNOSIS

Education of the patient with MS and those significant to the patient from the time of diagnosis and beyond is important. This knowledge is critical in promoting health, successful coping, and preventing disabling outcomes. Although many educational materials and resources are available for the MS patient, we identified a need to develop a guidebook (patient education manual) for our patients at the West County MS Center to avoid overwhelming the individual. This is a resource that consolidates information into one convenient source. This resource is simple yet comprehensive, non-biased, user-friendly, and a permanent reference. It includes an overview of the West County MS Center, diagnostic process, disease process, symptoms, treatments, and resources. It is our hope that this Guidebook will serve as a template for others to utilize with the ease of individualizing it for their particular office/center.

Study supported by an unrestricted educational grant from Serono, Inc.

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(P10) FUNCTIONAL IMPAIRMENT PATTERNS PROMPTING REFERRAL FOR OT SERVICES IN PATIENTS WITH MS

Functional Impairment Patterns Prompting Referral for OT Services in Patients with MS This study attempted to identify those factors that influence physicians' decision to refer patients with multiple sclerosis (MS) for occupational therapy (OT) services. The symptoms and functional impairments of 40 patients with MS attending a specialty outpatient MS clinic located in a university medical center who were either referred to and received (OT) or not referred (No OT) for occupational therapy services were compared using a self-rated questionnaire designed for this study. Participation in OT was more frequent among MS patients with musculoskeletal and movement-related impairments than for patients with complaints involving sensory functions, pain, cognition, or affective problems. Specifically, MS patients referred for OT had more complaints of difficulties speaking, swallowing, hand tremors, uncontrolled urinary urgency, and weakness of the legs than those not referred for OT. Fatigue was ranked among the most severe symptoms in both groups. Although 78% of MS patients indicated difficulty with activities of daily living (ADLs) at the time they responded to the questionnaire, only 30% reported seeing an OT. MS patients referred for OT services reported significantly more functional problems across all seven categories of ADLs than the No OT group ($p = .008$). MS patients receiving OT services also reported more difficulties in walking, working, cooking, driving, dressing, swallowing, speaking, bathing, and grooming than the No OT patients. These findings suggest MS patients are more likely to be referred for OT services when there are impairments in activities of daily living than any particular symptom complex. Furthermore, frequently no referral was made to OT even when patients exhibited problems that were amenable to OT treatment, such as fatigue, cognitive deficits, or sensorimotor impairments. This paper will inform other health care professionals about the scope of services that occupational therapists provide that may benefit patients with multiple sclerosis.

Study supported by Berlex Laboratories, Inc.

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(P14) CLINICAL UTILITY OF THE FATIGUE ALGORITHM : DATA FROM A FIELD STUDY

The purpose of this paper is to evaluate the clinical utility of the fatigue algorithm developed by the MS Council in the Clinical Practice Guidelines for Fatigue and MS.

BACKGROUND:

The fatigue algorithm was established to provide the clinician and researcher with a structure and process for evaluating and treating fatigue in MS. The algorithm is organized into 4 diagnostic areas of acute onset, non-MS, secondary, and primary fatigue with each of these undergoing diagnosis, treatment, and follow-up procedures. The clinical efficacy of this structure and process has not been validated.

DESIGN:

Subjects identifying fatigue as a problem were invited to participate. All scales and questionnaires recommended in the fatigue algorithm guidelines were administered. Where no measures were recommended for areas requiring screening, systematic tools were developed. Four patients completed the pilot test to ascertain the practicality, timing, fatigue tolerance, and clinical utility. Fifty patients completed the fatigue screening based on revisions from the pilot test.

RESULTS:

Pilot test findings suggested that screening one diagnostic area at a time lead to unacceptable delays and impractical need for bookings. Screening of all diagnostic areas simultaneously was time intensive and fatiguing. A screening package was developed and mailed to participants to complete prior to the fatigue assessment visit. Findings from the 50 patients suggested that the 4 diagnostic categories were robust in determining the presence of primary MS fatigue. Detailed analysis of responses also lead to identifying causes of fatigue not previously considered.

CONCLUSIONS:

The 4 diagnostic areas of the fatigue algorithm were useful in diagnosing causes of fatigue. However the linear, iterative sequence set out in the algorithm was less important, impractical, and fatiguing compared to the breadth and depth of the content. Revision to the flow and sequencing of fatigue algorithm may be necessary to ensure its clinical utility.

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(P26) PREVALENCE OF PRIMARY, SECONDARY & NON-MS FATIGUE IN A UBC MS CLINIC COHORT

The purpose of this study was to quantify the frequency of primary MS fatigue and distinguish it from secondary and other contributors of fatigue in MS.

BACKGROUND:

Primary fatigue is a lassitude that interferes with daily life- in the absence of other factors. Secondary MS fatigue is related to mobility or respiratory impairments. Other contributors of fatigue may be iatrogenic factors, depression, and sleep disturbances. The algorithm developed by the MS Council in 1998 is among the first to propose a detailed screening. The validity of this algorithm has not been tested nor the prevalence rates known for fatigue categories identified by the algorithm.

METHODS:

Subjects meeting the inclusion criteria participated in a fatigue assessment that included standardized screening tools for depression, sleepiness, fatigue, as well as sleep and fatigue questionnaires, mobility screen, and dyspnea scale. A pharmacist evaluated prescriptive and non-prescriptive substances in relation to fatigue. Data was coded and descriptive statistics used in analysis.

RESULTS:

59 subjects were invited to participate and 50 completed the screening. Fatigue was ranked the number one problem in 35 (70%) participants. 49 (98%) subjects described fatigue as present for longer than 6 months and 40 (80%) reported fatigue was exacerbated by heat. Primary MS fatigue was present in 14 (28%) participants. Secondary and non-MS fatigue was present in 36 (72%). The three most common causes of non-primary MS fatigue were sleep problems, mobility limitations, and depression. Late morning and early afternoon fatigue onset significantly correlated with primary MS fatigue.

CONCLUSIONS:

Primary MS fatigue could be diagnosed in less than a third of this study cohort. For the majority of patients fatigue was related to secondary MS fatigue or other factors with the presents of underlying primary MS fatigue unknown. Findings suggest that primary MS fatigue is not common in pure form suggesting accurate diagnosis of the contributors of fatigue is essential for intervention research and clinical decisions.

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(P7) COGNITION, PSYCHOSOCIAL ADJUSTMENT AND MOOD IN PATIENTS WITH RELAPSING-REMITTING MS

BACKGROUND:

Psychosocial adjustment in patients with MS appears to be significantly lower than in the general population. Research has indicated that factors influential in adjustment include the degree of cognitive impairment and mood state. Cognitive problems have been associated with decreased engagement in activities of daily living and social isolation. The current study is part of a longitudinal research program investigating the associations among cognition, psychosocial adjustment, and mood state in patients with relapsing-remitting MS (RR MS).

PURPOSE:

Our prior research indicates that cognitive dysfunction is associated with poorer adjustment at initiation of medication treatment. Memory deficits are also associated with greater mood disturbance at treatment initiation. The purpose of the current follow-up study was to determine whether, as MS progresses, cognitive dysfunction continues to be a major factor in psychosocial adjustment.

METHOD:

Before beginning a regimen of treatment with interferon b-1a (Avonex), participants were asked to complete a baseline neuropsychological evaluation, the Psychological Adjustment to Illness Scale-Self-Report, and the Profile of Mood States-Short Form. The same patients were asked to complete follow-up cognitive testing and the same two psychosocial questionnaires one year after treatment initiation.

RESULTS:

Five male and ten female patients (nine Caucasian and six African-American) with MS, 27-56 years of age, with an average of 15.4 years of education and a mean estimated IQ of 106.33, completed testing and questionnaires one year after treatment initiation. Data analyses revealed a similar pattern of results compared to prior findings at treatment initiation. Specifically, one year into treatment, patients with cognitive deficits continued to exhibit decreased psychosocial adjustment and increased mood disturbance. Furthermore, regression analyses indicated that both cognition and mood remained powerful predictors of adjustment.

CONCLUSIONS:

These findings suggest that timely identification of cognitive impairment and coordination of psychological services may contribute to psychosocial adjustment for patients with MS.

Study supported by Biogen, Inc.

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(P9) DYNAMICS OF MULTIPLE SCLEROSIS SICK RATE ITS PREVALENCE AND RISK FACTORS IN NOVOSIBIRSK

Multiple sclerosis is one of the pressing and unsolved problems in neurology. Epidemiological research in different regions with high and low risks of MS spreading is very important for the study of this disease. The present research was carried out on the basis of Novosibirsk Medical Academy Department of Neurology in a group of people with MS and a control group with different neurological pathologies (259 people in both groups).

Dynamics of Sick Rate. In 1980 there was an increase in the number of MS cases due to the improvement in diagnostics of MS, but the average number has decreased from 3,32 in 1980-1985 to 1,35 in 1986-1996. We can suggest that this decrease is the result of the influence of the cohort effect (the place and the period of the birth) on the natural course of chronic disease.

Dynamics of Disease Prevalence. In the course of our research the prevalence of MS in Novosibirsk was determined as 49,3 per 100 000 people. It considerably exceeds the number of cases in 1986 (29,2 per 100 000 people). This result can be explained by the increase of MS patients average life length, which is probably connected with the timely early diagnostics and improvement of methods of treatment.

Risk factors examined are heredity, parents' birthplace, meteosensitiveness, childrens' infections, allergy of different origin, operation, etc.

Conclusion

- Decrease of MS cases and further stability
- Novosibirsk is the city of medium risk and the leader in Asian region of Russia in MS
- The main risk factors of MS are: meteosensitiveness, combinations of children's infections (such as chicken-pox, otitis, herpes, ect.), parents' birthplaces with high and medium MS risks.

Further research will be carried out in the Novosibirsk Medical Academy.

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(P1) ADAPTATION OF THE NEUROPSYCHOLOGICAL TEST BATTERY (BRB-N) TO THE ESTONIAN POPULATION

Cognitive dysfunction in PwMS is a common problem, its frequency varies widely, reported rates ranging between 13 - 65 %. Thus there is a great need for neuropsychological assessment and brief sensitive test batteries in clinical work and rehabilitation.

The aim of the study is to adapt the Brief Repeatable Battery of Neuropsychological Tests (BRB-N) as a possible test-battery identifying cognitive dysfunction in PwMS into Estonian and to find its correlations with other tests.

METHOD:

40 PwMS (mean age 35.5 years, mean duration of the disease 6.5 years, mean EDSS score 4.0) and 40 healthy controls (mean age 36.6 years) were administered BRB-N, the Estonian Mental Abilities Scale, short version of the NEO-PIR and BDI, also the neurological status was evaluated in PwMS.

RESULTS:

Compared to controls MS group differed statistically from controls in BRB-N symbol digit modalities and verbal fluency subtests. In other subtests there were no statistical differences. The EDSS score and the duration of the disease didn't correlate with results of BRB-N, also there were no correlations found in between neuropsychological tests and NEO-PIR or the level of depression.

CONCLUSION:

The results of the neuropsychological tests of MS group were heterogenous. The BRB-N is sensitive tool in neuropsychological assessment, differentiating possible executive dysfunction. Although PASAT suggested the most sensitive neuropsychological measure didn't show statistically significant differences between two groups. Further data will be gathered to build up the normative data for the neuropsychological tests. Also it is one of the first neuropsychological test batteries adapted to Estonian population.

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(P3) HYPERSEXUALITY ASSOCIATED WITH A MULTIPLE SCLEROSIS EXACERBATION

INTRODUCTION:

Occurrences of hypersexuality associated with multiple sclerosis exacerbations are rare.

BACKGROUND:

A 51-year-old female presented to the Western Multiple Sclerosis Center with a new complaint of hypersexuality atypical of her. The problem began 10 days earlier after the patient heard a “loud crashing sound” inside her head, like a “gunshot.” Following this incident, the patient’s sexual desire heightened to the degree she was wanting to “drag someone off the street for sex” at all hours of the day and night. The patient said she was happily married and this new behavior was frightening. It also annoyed her husband. After a few days of frequent sex, he was unable to keep up with his wife’s demands despite obtaining a new prescription for Viagra. Upon further questioning, the patient recalled another incident of hypersexuality occurring 2 years earlier, which was also preceded by hearing a loud gunshot sound inside her head. At that time the problem was less severe and lasted approximately 7 days before spontaneously resolving.

PLAN:

Diagnostic workup includes history and physical exam, consulting with MS specialists and additional healthcare providers, ordering a brain magnetic resonance imaging (MRI) scan, drawing labs (including hormone levels), and treating with pulse steroids if warranted. Steroids were delivered and resulted in a significant reduction in symptoms. Unfortunately, the problem returned soon after the steroid treatment was completed. The plan is to repeat the brain MRI scan, with triple strength gadolinium, to more specifically assess for MS disease activity, and repeat pulse steroids if necessary.

EVALUATION:

Recurrent hypersexuality in a multiple sclerosis patient responsive to steroids. Diagnostic workup in progress.

Study supported by NIDRR grant #H133B980017

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(P23) PREDICTORS OF ADHERENCE TO COPAXONE THERAPY IN INDIVIDUALS WITH SELF-REPORTED PROGRESSIVE FORMS OF MS

The purpose of this study was to evaluate psychological, biophysical, and sociodemographic variables as predictors of adherence to glatiramer acetate (Copaxone) therapy in individuals with self-reported progressive forms of Multiple Sclerosis (MS).

The review of the theoretical and empirical literature lends support for self-efficacy, self-esteem, hope, and disability to be strong predictors of adherence to Copaxone therapy in individuals with progressive forms of MS. Therefore the hypotheses for this study were: (1) higher self-efficacy will be a significant predictor of adherence, (2) higher self-esteem will be a significant predictor of adherence, (3) higher hope will be a significant predictor of adherence, and (4) a lower level of disability will be a significant predictor of adherence.

Potential participants were identified from the NARCOMS Patient Registry database (n = 600) and Shared Solutions MS patient support database (n = 600) and were mailed the data collection instruments (MS Self-Efficacy Scale [MSSE], Rosenberg Self-Esteem Scale, Herth Hope Index, and Performance Scales), a sociodemographic questionnaire, and an information sheet regarding consent to participate in the study. The sample included those who had taken Copaxone for at least one year and those who had discontinued Copaxone therapy. A total of 594 individuals responded, and their information was reviewed to determine whether they met the study criteria. For the evaluation of predictors of adherence to Copaxone therapy in individuals with self-reported progressive forms of MS, 199 met the criteria, with 107 adherent to therapy for at least one year, and with 92 who discontinued treatment within the first year.

Logistic Regression revealed four significant predictors of adherence: The MSSE Control subscale ($W=14.97$, $p = .000$), MSSE Function subscale ($W=5.04$, $p=.03$), and the perceived support of the doctor ($W=5.17$, $p=.02$) and spouse ($W=3.82$, $p=.05$). The higher the score on the MSSE Control subscale, the more likely the individual will adhere to Copaxone. For each unit of increase in score, the likelihood of adherence increased. In other words, the individual with a score of 900 is 7.4 times more likely to adhere to Copaxone than an individual with a score of 400. The higher the score on the MSSE Function subscale, the more likely the individual will adhere to Copaxone. The individual with a score of 900 is 2.7 times more likely to adhere to Copaxone than an individual with a score of 400.

The MSSE Control and Function subscales show promise of being useful to predict adherence. Although further testing is recommended, the MSSE is brief, easily administered and lends itself to office practice. Physician support should be conveyed to individuals starting and maintaining on Copaxone therapy for MS. Spouse support should be encouraged as the individual with progressive MS manages self-care.

Study supported by Teva Neuroscience

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(P19) A SURVEY WITH INDIVIDUALIZED FEEDBACK REGARDING LOW BONE MINERAL DENSITY AMONG PEOPLE WITH MS

OBJECTIVE:

To increase awareness of osteoporosis risk among people with MS and to identify frequency of osteoporosis risk factors, frequency of low bone mineral density (BMD) testing, and use of preventive and treatment strategies for low BMD among a large group of people with MS.

BACKGROUND:

Recent research reveals (1) that low BMD is common among people with MS and (2) that there is a lack of awareness of this issue among people with MS.

DESIGN/METHODS:

Using email, a specially designed registry (www.ms-cam.org), and a branched, web-based survey, we collected self-reported data related to osteoporosis from 1700 people with MS. Participants who completed the survey received an individualized list of osteoporosis risk factors.

RESULTS:

The most frequently reported osteoporosis risk factors were: being female, 82%; using steroids, 77%; consuming few dairy products, 57%; smoking, 50%; vitamin A supplementation, 40%; and decreased weight bearing, 38%. Of the 28% of respondents referred for BMD testing, nearly 90% complied. Of those who had BMD testing, 26% reported diagnosis with osteoporosis and 33% with osteopenia. The treatments most frequently recommended by health care providers for low BMD were: calcium, 62%; bisphosphonates, 58%; weight-bearing exercises, 28%; vitamin D, 28%; and hormone replacement therapy, 18%. Of those not diagnosed with low BMD, reported prophylactic steps included: calcium, 43%; vitamin B12, 26%; vitamin D, 21%, magnesium, 20%; and weight-bearing exercises, 20%.

CONCLUSIONS:

Too few people with MS may be using calcium (43%) and vitamin D supplements (21%) prophylactically, and some risk factors, such as consuming few dairy products (57%) and smoking (50%), are modifiable. In addition, too few (28%) may be referred for bone density testing. Through our web-based system, we were able to address the lack of awareness of low BMD by providing both individualized risk factors and general information to 1700 people with MS.

Study supported by Proctor and Gamble

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(P20) ASSESSING DEPRESSION IN MS USING THE BDI-II

When psychological symptoms are assessed using self-report measures, clinicians may find it difficult to determine whether somatic symptoms endorsed are due to a medical condition, its treatment, or an underlying affective disorder. This potential ambiguity has led some to question the utility of DSM-IV criteria for depressive symptoms in MS. For example, among the criteria for a major depressive episode — sleep disturbance, psychomotor retardation, fatigue, diminished ability to concentrate — are many symptoms common in MS.

Among the most commonly used measures of depressive symptoms is the Beck Depression Inventory (BDI; Beck et al., 1961). Despite its frequent use in the MS literature, the issue of symptom overlap between depression and MS fuels ongoing controversy.

Interestingly, the revised BDI (BDI-II; Beck et al., 1996) has not been used in any published studies on patients with MS. While items related to work difficulty and health concerns were eliminated, items on agitation, loss of energy, and concentration difficulty (also common symptoms of MS) were added. At the Mellen Center, all individuals undergoing psychological evaluations complete self-report measures of psychological status, including the BDI-II. The goal of the present study was to explore the psychometric properties of the BDI-II in an MS population.

Both women (n=86, M=20.9) and men (n=29, M=17.3) with MS reported similar, moderate levels of depression on the BDI-II ($p > .10$). The BDI-II had a high internal consistency reliability in this sample ($\alpha = .91$). Furthermore, results of an exploratory factor analysis suggest that there are not two distinct factors for affective and cognitive symptoms. Rather, one general depression factor best explains the structure of the measure in an MS population. These results will be compared with properties of the BDI-II in a college student population. Implications for the assessment of depression in MS populations will also be addressed.

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(P21) CLIENTS SATISFICATION WITH SERVICES AT MS CENTER

Background:

Often the services offered to PwMS in MS center are relatively costly due to the complexity of the disease. However, even with the best management, the efforts will not produce dramatic changes in the disease course, although significant changes in the quality of life can be achieved. Hence the question arises for referring physician and health care authority - is it worth it? One of the simplest ways is to ask the PwMS - are you satisfied with the services offered by MS centre? However, paradoxically not always improvements in quality of life result in satisfaction with services offered by professionals working with PwMS.

Methods:

All team members in MS Center were interviewed by a trained interviewer, specifically asking to point out factors influencing the quality of life of PwMS that can be improved and to evaluate the role of a specialist in producing these changes. Also the client-related factors were analysed; the expectations of clients when they are referred and discharged. Clients' satisfaction was analyzed with a questionnaire where PwMS evaluated different aspects of care rooms, staff, expectations at referral and specifically all problems that were solved before discharge, overall satisfaction with the stay at the centre.

Results:

12 team members were interviewed. The factors defined as successfully managed were bladder dysfunction, depression, spasticity, informing about MS. Professional attitude and knowledge, good contact with clients, team work and the client himself were considered the factors most influencing outcome. 34 clients were filled the questionnaire and the clients' expectations were often much higher - expecting the be cured or significantly improved.

Conclusion:

The discrepancy between improvements in aspects of quality of life and clients' satisfaction could be influenced by the non-realistic expectations by the clients. Other factors possible influencing clients' satisfaction will be discussed.

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(P22) MULTIPLE SCLEROSIS IN IRELAND - A NURSING OVERVIEW

The Republic of Ireland has a population of 3.84 million, it is similar in size to South Carolina and would fit in Texas eight times. Approximately 7,000 people are diagnosed with Multiple Sclerosis (MS), therefore the proportion of people with MS (PWMS) is 158/100,000. The population is served by 5.5 MS Nurse Specialists and 12 Neurology Physicians.

A recent study comparing Counties Wexford (South East) and Donegal (North West) illustrated

MS rates =	120.7/100,000 (Wexford)
	176.1/100,000 (Donegal)

This demonstrates a 42% higher incidence of MS in Donegal suggesting that there is a difference in the prevalence of MS susceptibility genes between the two counties.

The Irish Network of MS Nurses (INMSN) was formed in response to the everincreasing needs of PWMS. It has a twofold rationale; firstly, to provide continuing support and education to PWMS, their families and carers from diagnosis throughout the disease trajectory, secondly, to enable MS Nurse Specialist develop and implement best practice in the delivery of holistic health care.

A home care nursing service was initiated by the pharmaceutical companies, to provide support and education to PWMS commencing disease-modifying treatments. MS Nurse Specialists liaise closely with the Home Care Nurses to improve the service and identify potential problems.

There is an established link between the INMSN and MS Society of Ireland to promote patient advocacy.

We are proud to include that several members of the INMSN achieved International Certification in MS Nursing (MSCN) in 2002.

In conclusion, we acknowledge that the challenges ahead are many but working in association with our National and International colleagues, we undertake to meet these challenges to enhance the quality of life for PWMS.

“To live is the rarest thing in the world, most people exist, that is all”
Oscar Wilde (1854-1900)

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**(P11) GETTING THE WORK DONE:
A QUALITATIVE STUDY OF INDIVIDUALS WITH MULTIPLE SCLEROSIS**

Multiple sclerosis (MS) affects activities of daily living including the ability to participate in work activities. Work may be defined as an activity performed to accomplish something in the presence of either physical or cognitive obstacles that might make reaching the goal difficult. The purpose of this study was to investigate the work experiences of individuals with multiple sclerosis. A qualitative research approach was used to interview thirteen individuals with MS. Qualitative interpretation of the interviews revealed two major themes and seven subthemes related to work experiences. The first primary theme, defining the work included the following subthemes, priorities (seeing what is important in daily life activities), plans (learning about resources and requirements necessary to achieve goals) and perspectives (addressing the obstacles on your own). The second major theme, changing how things get done, included precipitating factors; awareness; constructing the strategies; and evaluating the strategies. The results of this study indicated that individuals with MS develop and gather information and resources and develop strategies in order to meet work-related goals. A comparison between existing intervention programs and the information shared by participants is discussed.

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(P12) THE JANET PEARCE NURSING FELLOWSHIP

In 2001 for the first time ever, the New York City Chapter, National Multiple Sclerosis Society offered a program designed specifically for nurses who treat or who are interested in treating patients with multiple sclerosis. Janet Pearce, volunteer, fundraiser, and member established the Nursing Fellowship Program. Her interest in educating nurses evolved from a realization that “nurses are front-line caregivers for MS patients like myself...and that “bad times”, filled with bone-shaking anxiety and fear, could be eased by having access to a nurse with specialized training”. The goal of the fellowship is to ensure that nurses are prepared to meet the diverse needs of MS patients and provide quality, compassionate care.

PROGRAM

1) Fellows - Designed to augment their education with individualized training, fellows, who receive a financial stipend, study under the guidance of an interdisciplinary team. Over the course of three semesters 11 undergraduate students studied at two chapter-supported MS Care Centers. Half of the students indicated a desire to go into MS nursing. Beginning in 2003, fellowships will be offered to RNs with at least one year of clinical experience.

2) Conference – 85 nurses attended the first orientation conference. All presenting faculty were experts in MS treatment; the registration fee was kept to a minimum; and travel scholarships offered. The curriculum included:

- Overview Of MS/Research/Treatments
- Cognitive & Psychosocial Issues
- Clinical Administrative Issues
- Neuro-rehabilitation & Nursing Care
- Tour of an Ms Care Center
- Patient & Family Education
- Hands-On Review of Drugs

EVALUATION

72% of participants indicated that the content was relevant to the program’s objectives and 75% would recommend this program to other professionals. Over 50% of attendees returned a post conference evaluation; 98% indicated an interest in attending a follow-up conference.

CONCLUSION - Recognizing the vital role nurses play in the care of MS patients, the NYC chapter will:

- Continue the Fellowship
- Plan a conference for the fall 2003
- Offer it as a model to interested organizations

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