Symptoms and symptom management

1. Feinstein A, Lapshin H, O’Connor P.
   **Looking anew at cognitive dysfunction in multiple sclerosis: the gorilla in the room.**
   Cross sectional study of a consecutive sample of 68 people with MS who completed the minimal assessment of cognitive function in multiple sclerosis (MACFIMS) test, the Stroop test, which demonstrates reaction time, and a measure of inattentional blindness (the gorilla in the room). Results suggest that less inattentional blindness is associated with heightened distractibility and authors suggest that this may explain why people with MS struggle with external stimuli and multitasking whilst performing well at neuropsychological assessment.

2. Garfield AC, Lincoln NB.
   **Factors affecting anxiety in multiple sclerosis.**
   Questionnaire study of community sample of 157 people with MS and EDSS < 6.5. 57% were found to be clinically anxious on the hospital anxiety and depression scale (HADS). Low self efficacy, depression, and higher levels of disability and stress were predictors of anxiety. Authors conclude that assessment of both depression and anxiety is important and that psychological therapies to improve self efficacy and provide people with skills to manage mood would be beneficial.

3. Jepson RG, Williams G, Craig JC.
   **Cranberries for preventing urinary tract infections.**
   24 studies were included in the review with a total of 4,473 participants. This updated review found that cranberry juice was less effective than previously indicated and that as the benefit for preventing urinary tract infections (UTIs) is small, authors cannot recommend cranberry juice for prevention of UTIs.

4. Lalkhen AG, Bedford JP, Dwyer AD.
   **Pain associated with multiple sclerosis: epidemiology, classification and management.**
   Article considers the epidemiology of pain in MS, types of pain experienced and evidence underpinning current pain management therapies. The complex multidimensional nature of pain involving cognitive, emotional and behavioural aspects is explored and the role of specialist pain services highlighted.

   **Multiple sclerosis relapses and depression.**
   132 people recruited from an open access clinic reported prevalence rate of 44% for possible depression during relapse and 55% for anxiety. These scores reduced at two and six months post relapse. Authors also found some correlation between disability levels and mood over the short term and suggest further study is required to determine how best to manage the psychological impact of coping with the acute disabling effects of MS relapses.
**The use of focus groups to characterise symptoms in persons with multiple sclerosis.**  
16 people with relapsing remitting MS took part in focus groups. Unique ways of describing pain were highlighted. Authors suggest that health professionals encourage people to give details of symptoms and their inter-relationship to assess the total impact on daily life. Further investigation of heat intolerance, fatigue, cognitive impairments and visual loss should also be carried out as prompt assessment may allow anticipation of additional symptoms.  

**Suicide risk in multiple sclerosis: a systematic review of current literature.**  
A higher rate of suicide was found in people with MS than in the general population on examination of the 12 articles that met criteria for this review. Risk factors included severe depression, having a progressive type of MS, an earlier disease course or higher level of disability, low income, and social isolation. Authors highlight the importance of mental health assessment as part of routine evaluation and suicidal ideation should be considered in the early stages of diagnosis.  

### Disease modifying treatments

**Placebo-controlled phase 3 study of oral BG-12 or glatiramer in multiple sclerosis (CONFIRM).**  
This phase III study with 1,232 participants was similar to DEFINE, but with an additional group who took glatiramer acetate for comparison. BG-12 reduced annual relapse rate by 44% for the twice-daily dose and by 51% for the three times daily dose, compared to placebo. In contrast, glatiramer acetate reduced relapse rate by 29%.  

**Placebo-controlled phase 3 study of oral BG-12 for relapsing multiple sclerosis (DEFINE).**  
This phase III, two year study compared BG-12 taken either two or three times daily and placebo in more than 1,200 participants with relapsing remitting MS. Compared to placebo, the drug reduced the annual relapse rate by 53% for the twice daily dosing and 48% for the three times a day dosing. BG-12 twice daily reduced the risk of disability progression by 38% while BG-12 three times per day reduced risk by 34%.  

**Switching therapy from natalizumab to fingolimod in relapsing-remitting multiple sclerosis: clinical and magnetic resonance imaging findings.**  
Reactivation of disease has been reported on stopping natalizumab, this study examined 22 people with relapsing remitting MS and JCV antibodies who transferred from natalizumab to fingolimod after a three month washout period. Disease reactivation was found in 50% of the group with clinical relapses in six and MRI activity in four. Authors conclude that fingolimod does not exert clinical activity quickly enough to suppress MS activation following a break from natalizumab.  

**Association between use of interferon beta and progression of disability in patients with relapsing-remitting multiple sclerosis.**  
Three groups were identified from medical records: 868 people treated with one of the beta interferons, 829 untreated and a group of 959 people whose MS had been studied before beta interferon was available. There was no significant difference in time from eligibility for treatment to EDSS 4 or EDSS 6 across the three groups. Authors conclude that administration of beta interferon was not associated with reduction in progression of disability, but recognised that the study focussed on mobility and factors such as quality of life and ability to work, were not considered.  
JAMA 2012;308(3):247-56.

**Multiple Sclerosis and Extract of Cannabis: results of the MUSEC trial.**  
279 people took oral cannabis extract (tetrahydrocannabinol) or placebo for 12 weeks in this phase III study. More people taking the active treatment had reduced muscle stiffness, spasms and pain, and improved sleep quality. The reduction in muscle stiffness after 12 weeks was almost twice as high with the cannabis extract as with placebo. The difference was most noticeable in people who were not taking other medicines for muscle stiffness and spasms. No new safety concerns were observed.  
Self-management

13. Heesen C, Köpke S, Kasper J, et al. **Behavioral interventions in multiple sclerosis: a biopsychosocial perspective.** Considers behavioral interventions (BI) including exercise training and sports, patient information, cognitive behavioural approaches and cognitive training. Current evidence for each is tabulated and examined. The biological mechanisms that might explain the beneficial effects of BI on clinical outcomes in MS are explored. Authors conclude that evidence based patient information is the most promising approach to self management and decision autonomy. Expert Rev Neurother 2012;12(9):1089-100.

14. Kasser SL, Kosma M. **Health beliefs and physical activity behavior in adults with multiple sclerosis.** 348 people took part in a web based survey to assess their perceived benefits and barriers to physical activity, susceptibility to other chronic conditions and self efficacy. Fatigue and lack of motivation were greatest barriers, whilst self efficacy and recognition of the benefit of exercise were predictors of physical activity. These findings suggest that people with MS may not perceive themselves to be at more risk of other conditions related to inactivity than the general population and that interventions should be directed at improving self efficacy and improving knowledge of the benefits of exercise. Disabil Health J 2012;5(4):261-8.

15. Plow M, Finlayson M. **A qualitative study of nutritional behaviors in adults with multiple sclerosis.** Interview study of eight people with MS and mobility impairments obtained insights into dietary habits, food preparation, shopping for food and eating out. Overall themes emerging were: it's a lot of work; it's not just up to me; sifting through information on nutrition in MS; why I eat what I eat. The impact of family as gatekeepers of nutritional behaviour, lack of clear information on dietary supplements for MS, high fat of convenience foods and physical barriers to shopping were highlighted. Authors suggest that fatigue management, instruction in understanding nutritional information and developing relevant action plans could improve eating habits. J Neurosci Nurs 2012;44(6):337-50.

Rehabilitation

16. Soundy A, Benson J, Dawes H, et al. **Understanding hope in patients with multiple sclerosis.** Qualitative study in which 11 people, six with progressive MS and five with relapsing remitting MS, engaging in a rehabilitation programme were interviewed. Three themes were identified; defiance, accepting the diagnosis and prognosis, accepting deterioration, which formed the basis for different hopes. Authors stress the importance of the health professional listening to patients’ narrative in order to support effective adjustment to MS. Physiotherapy 2012;98(4):349-55.

Employment

17. Sweetland J, Howse E, Playford ED. **Systematic review of research undertaken in vocational rehabilitation for people with multiple sclerosis.** Literature review found that factors leading to unemployment for people with MS are clearly defined and include: lack of information about legal rights and support; poor support with job retention; lack of employer support and health professionals advising unemployment to manage fatigue and other symptoms. Factors helping people to stay in work include specialist vocational rehabilitation services, early intervention and liaison with employers. Authors suggest research is needed to identify efficacy and cost effectiveness of different models of vocational rehabilitation. Disabil Rehabil 2012;34(24):2031-8.

Co-existing conditions

18. Pakpoor J, Handel AE, Giovannoni G, et al. **Meta-analysis of the relationship between multiple sclerosis and migraine.** Eight studies were eligible for inclusion in this meta-analysis, which included 1,864 people with MS in total. A significant association between migraine and MS was demonstrated, people with MS being twice as likely to report migraine as controls. However authors suggest the mechanism between migraine and MS, including clarification of migraine as a risk factor, a co-morbidity or a symptom of MS, remains to be determined. PLoS ONE 2012;7(9):e45295
Assessment tools

Diagnosis of MS, use of antidepressants, use of anticonvulsants, history of falling and history of fatigue are included in this score to estimate long-term risk of osteoporotic and hip fractures in people with MS. This is the first score to include MS specific categories in addition to those of the World Health Organisation FRAX calculator of fracture risk. Authors suggest that this may be useful for health professionals to identify people who would benefit from bone mineral density screening and in communicating fracture risk to individuals with MS.

Natural history

The British Columbian MS database was interrogated between 1980 and 2009 for people who were not receiving any disease modifying treatment. 2,961 people with MS had data with one year between assessments and 2,382 people had a two year gap between assessments. Looking at the yearly intervals, 15% showed an improvement of at least half a point on the EDSS scale, 8% of at least one point and 2.2% showed an improvement of at least two points. 24% of people with primary progressive MS experienced improvements over one or two years and half of these experienced a longer improvement. Researchers concluded that improvements in MS are not unusual although the majority of people in the study showed no change in their level of disability over one or two years.

Pregnancy and childbirth

156 studies were identified by this review with 761 interferon beta, 97 glatiramer acetate and 35 natalizumab exposed pregnancies. Authors highlight evidence on other DMTs, paternal exposure and long term developmental outcomes remains limited and state that women with MS should still be advised to discontinue DMTs if planning to conceive.

Paediatric MS

Study demonstrated that in a cohort of children the 2010 McDonald criteria are sensitive and specific for the diagnosis of paediatric MS. However the criteria performed poorly in children manifesting with acute disseminating encephalomyelitis (ADEM) and the panel advised caution when applying the 2010 criteria to this group and to younger children.

Costs

23. Karampampa K, Gustavsson A, Miltenburger C, Eckert B. **Treatment experience, burden and unmet needs (TRIBUNE) in MS study: results from five European countries.**
Provides a detailed exploration of costs in relation to relapse and disease severity in France, Germany, Italy, Spain and the UK. Resource utilization in terms of hours of professional care, inpatient and outpatient treatment, co-prescribed medication and informal care are included in determining costs. The economic impact of relapse is demonstrated.

You can order any of the papers featured by contacting info@mstrust.org.uk. A minimum donation of £1 is requested to cover our costs.