Disease modifying treatments

**Palace J, Duddy M, Bregenzer T,** et al.

*Effectiveness and cost-effectiveness of interferon beta and glatiramer acetate in the UK Multiple Sclerosis Risk Sharing Scheme at 6 years: a clinical cohort study with natural history comparator.*

The Risk-sharing Scheme is collecting data from 5,610 patients to measure the cost effectiveness of the treatments in routine clinical practice over 10 years. This six year data demonstrates that all four drugs, Avonex, Rebif, Betaferon and Copaxone are clinically effective in reducing the progression of disability in line with estimates extrapolated from two year clinical trials. It also demonstrates that the drugs are being prescribed in a cost effective manner for the NHS (at £36k per quality-adjusted life year). Problems highlighted in earlier analysis have been overcome using a new natural history database.

*Lancet Neurol 2015;14(5):497-505.* [Ref 19-3-1]

**Kappos L, O’Connor P, Radue EW,** et al.

*Long-term effects of fingolimod in multiple sclerosis: the randomized FREEDOMS extension trial.*

FREEDOMS was a double-blind, placebo-controlled study involving 1,272 people with relapsing remitting MS. Participants received one of two doses of fingolimod or placebo over two years. The relapse rate for people in the placebo group was 0.40, compared to 0.18 for a 0.5mg fingolimod dose (a reduction of 54%) and 0.16 with a 1.25 mg dose (a reduction of 60%). The reduction of progression of disability was 30% and 32% respectively compared to placebo. 916 of these participants became the extension population and demonstrated that the benefits seen during the original trial were sustained during the two year extension period.

*Neurology 2015;84(15):1582-91.* [Ref 19-3-2]

**Wilson LS, Loucks A, Gipson G,** et al.

*Patient preferences for attributes of multiple sclerosis disease modifying therapies.*

50 people with relapsing remitting MS completed surveys relating to benefits, adverse effects and routes of administration of 16 hypothetical disease modifying therapies (DMTs). Participants were asked to rank their preferences. Results demonstrated a high preference for DMTs which could improve symptoms in addition to a preference for reduction of both long-term disability progression and MRI changes. Participants strongly preferred daily oral medication. Researchers suggest the inconsistency between DMT efficacy and patient’s expectations for symptom improvement, rather than relapse reduction, may partially explain low drug adherence.

*Int J MS Care 2015;17(2):74-82.* [Ref 19-3-3]

MS relapses

**Galea I, Ward-Abel N, Heesen C.**

*Relapse in multiple sclerosis.*

Review explores the recognition and management of MS relapses for the generalist practitioner. It considers factors affecting relapse, differential diagnoses including symptom fluctuations, paroxysmal symptoms and pseudo relapses. The impact of relapse, treatment, rehabilitation and the role of the MS specialist nurse are also considered.

*BMJ 2015;350:h1765.* [Ref 19-3-4]
A predictive model for corticosteroid response in individual patients with MS relapses.

Exploratory study using EDSS and a patient recorded outcome (PRO) tool to monitor response to corticosteroids for MS relapse in data from 98 people, 75 of whom were female. EDSS and multiple sclerosis impact scale (MSIS-20 v1.0) scores were measured at baseline and at six weeks. Better response to corticosteroids after six weeks was found in people with younger age and milder relapses. The finding that older patients were less likely to respond to corticosteroids, confirms those of earlier studies that age and relapse severity are key predictors of recovery. Authors suggest that using the graphical representation of likely outcome generated by the study and PRO may be valuable in clinical situations when assessing individuals for corticosteroid treatment.
http://tinyurl.com/QMSRU-19-3-5

Diagnosis

Transcripts from recordings of 88 MS outpatients at their first consultation with a neurologist were examined. Prior to consultation patients completed an anxiety and depression questionnaire (HADS). To determine how people with MS expressed their emotions, verbal cues relating to hidden worries, stressful life events and concerns were recorded. It was found that in 75% of instances of expressions of concern by the person with MS neurologists responded by changing the subject, ignoring the cue or giving advice. Patient anxiety was found to be directly associated with emotional expressions. Authors suggest that neurologists fail to respond to emotional cues of patients and that improvement in this aspect of communication is essential for effective future shared decision making.
http://tinyurl.com/QMSRU-19-3-6

Symptoms and symptom management
Harrison AM, Bogosian A, Silber E, et al.
‘It feels like someone is hammering my feet’: understanding pain and its management from the perspective of people with multiple sclerosis.

Six men and 19 women with MS experiencing moderate to severe pain took part in in-depth semi-structured interviews. Key themes that emerged for pain in the context of MS were: vivid descriptions of pain; pain beliefs; dealing with frustration and anger; and attitudes and beliefs about pain management. Participants also reported difficulty separating pain from other aspects of MS such as numbness, stiffness and fatigue. Attitudes to pain management were split between acceptance of pain or focusing on pain reduction. Authors suggest that understanding personal beliefs about pain and pain management may provide opportunities to improve approaches for more successful acceptance and management.
Mult Scler 2015;21(4):466-76. [Ref 19-3-7]

Multiple sclerosis increases fracture risk: a meta-analysis.

Nine cohort studies were included in this meta-analysis which demonstrated a significant association between fracture risk and MS. This risk was significantly associated with women but not men. Sub group analysis of fracture site found tibia, femur, hip, pelvis, vertebrae and humerus were increased. Stratification by history of drug use highlighted antidepressants, anxiolytics, anticonvulsants and glucocorticoids increased risk of fracture. Authors suggest health professionals need to be aware of increased fracture risk in these groups.
Biomed Res Int 2015;650138. [Ref 19-3-8]
http://tinyurl.com/QMSRU-19-3-8

Rehabilitation
Kahn F, Amatya B, Kesselring J, Galea M.
Telerehabilitation for persons with multiple sclerosis.

Review aimed to address whether telerehabilitation achieves better outcomes compared to traditional face-to-face intervention, the types of telerehabilitation that are effective and which settings influence specific outcomes. Nine randomised controlled trials covering 531 participants were found, but as all interventions had different purposes and used different technologies, no single conclusion was possible. The authors found there was only low quality evidence to support using telerehabilitation in managing symptoms such as fatigue, with limited evidence of its benefits in reducing symptoms and improving quality of life in the long-term. Authors conclude that more robust trials are needed to build evidence for type and cost effectiveness of these interventions.
Cochrane Database Syst Rev 2015;4:CD010508. [Ref 19-3-9]
http://tinyurl.com/QMSRU-19-3-9
Physical activity

Betts L.
Dynamic movement Lycra orthoses in multiple sclerosis.

Article considers the role of Lycra orthoses in the context of both upper and lower limb function. Use of upper limb orthoses in shoulder support and positioning, reduction of pain and prevention of contracture is explored. Use of dynamic movement orthoses in reduction of increased tone, damping down tremor, core stability and balance, as well as the combined effect with FES in enhancing both treatment modalities are examined. Author includes case studies but recognises the current lack of robust research evidence to support use in clinical practice.
Br J Neurosci Nurs 2015;11(2):60-4. [Ref 19-3-10]

The effects of exergaming on balance, gait, technology acceptance and flow experience in people with multiple sclerosis: a randomized controlled trial.

In this study 56 people clinically diagnosed with MS and able to walk at least 100 metres with or without a walking aid were split into three groups. One group received balance training using the Nintendo Wii Fit, the second group received traditional physiotherapy balance training, and the third group no training. Those using the Wii Fit saw an equal improvement in their balance to those using traditional physiotherapy exercise and a significantly greater improvement over those who received no training. Researchers found that people using the Wii Fit reported that the experience was enjoyable and entertaining and suggest that they are more likely to continue their exercise over a longer period.

http://tinyurl.com/QMSRU-19-3-11

Street T, Taylor P, Swain I.
Effectiveness of functional electrical stimulation on walking speed, functional walking category, and clinically meaningful changes for people with multiple sclerosis.

Case series examined consecutive sample of 187 people with MS and drop foot between 2008 and 2013 in a specialist FES centre at a district hospital. Of the 153 people who responded to treatment 89% were still using the device after 20 weeks. 71% of people achieved a clinically meaningful increase in walking speed which translated to noticeable effects on practical daily activity and improved quality of life. Authors suggest that as this study includes data from a broad range of people from standard clinical practice, it provides further evidence for practical clinical efficacy of FES to control foot drop in people with MS.
Arch Phys Med Rehabil 2015;96(4):667-72. [Ref 19-3-12]

Psychological aspects


15 Black Caribbean (BC) and 15 White British (WB) people with severe MS (EDSS>6) were interviewed and data analysed using a framework approach. Both groups voiced “logical scientific” explanations for their condition however some BC participants also demonstrated explanations connected to deeply held religious or supernatural beliefs. Authors suggest that health and social care professionals make use of illness narratives to understand how people from diverse communities make sense of their condition and so enable health professionals to provide more relevant and effective support.
BMC Palliat Care 2015;14(1):13. [Ref 19-3-13]
http://tinyurl.com/QMSRU-19-3-13

Patient engagement


Using workshops this international collaboration identified issues influencing patient engagement specific to MS. Themes that emerged were: setting and facilitating engagement by education and confidence building; increasing the importance of quality of life and patient concern using patient reported outcomes; providing credible sources of accurate information; encouraging treatment adherence through engagement; and empowering through a sense of responsibility. Examples of successful patient engagement strategies and interventions from different countries are explored, barriers discussed and practical strategies suggested.
Mult Scler Relat Disord 2015;4(3):202-18. [Ref 19-3-14]

Employment

Honan CA, Brown RF, Batchelor J.
Perceived cognitive difficulties and cognitive test performance as predictors of employment outcomes in people with multiple sclerosis.

A cross sectional community based sample of 33 men and 78 women completed a number of screening tests to assess difficulties at work, depression and cognitive functioning. Slower cognitive processing speed was found to be a strong predictor of unemployment or reduced work hours whilst poor delayed recall memory was the strongest predictor of reduced work hours. It was found that a person's perceived cognitive difficulties in the
workplace predicted work outcomes regardless of actual cognitive difficulties. Authors suggest that perceptions of cognitive problems, in addition to the problems themselves, and depression should be addressed in vocational rehabilitation programmes. 

Wellness

Smoking and physical activity: examining health behaviours and 15-year mortality among individuals with multiple sclerosis.

2,994 people with MS completed a health survey containing information on smoking and physical activity. Mortality was examined for the period from 1999 to 2013. After adjusting for demographic factors, physical functioning, mental health, and comorbid medical conditions, baseline smoking was associated with greater mortality and higher levels of baseline physical activity were associated with lower mortality. Authors suggest these modifiable health behaviours offer health professionals opportunities for intervention.

Pregnancy and childbirth

Kieseier BC, Benamor M.
Pregnancy outcomes following maternal and paternal exposure to teriflunomide during treatment for relapsing remitting multiple sclerosis.

Study reports the outcomes of unplanned pregnancies occurring in teriflunomide clinical trials. 83 pregnancies were reported in women enrolled in trials despite requirements to use reliable contraception, and 22 pregnancies in partners of male participants. Of these, 70 women were exposed to teriflunomide. Outcomes included 26 live births, 13 spontaneous abortions and 29 induced abortions. All newborns were healthy with no structural or functional abnormalities. Rate of spontaneous abortion with teriflunomide was comparable with that of the general population and induced abortions were not due to defects. There were 19 pregnancies in partners of treated individuals resulting in 16 live births, one spontaneous and two induced abortions. No abnormalities were found in the newborns. Authors conclude that these findings do not indicate teratogenic signals in people treated with teriflunomide.
Neurrol Ther 2014;3(2):133-8. [Ref 19-3-17]

Quality of life

Impact of anger on the health related quality of life of multiple sclerosis patients.

157 consecutive MS patients were enrolled in this study and completed depression, anxiety, anger and quality of life assessments. Higher levels of anger were found to impact on health related quality of life (HRQoL) after adjusting for other variables. A tendency not to express feelings of anger was a predictor of low HRQoL for women, but was less so for men. Authors suggest that it is the extent to which anger remains unexpressed that impacts negatively on HRQoL in people with MS. Implications for practitioners to improve anger management and relaxation therapies are considered.
Mult Scler 2015;21(5):630-41. [Ref 19-3-18]

MS services

Thomson A, Rivas C, Giovannoni G.
Multiple sclerosis outpatient future groups: improving the quality of participant interaction and ideation tools within service improvement activities.

Article explores how the use of a design-led exercise can produce improved outpatient experience. A reinterpretation of focus group methodology using physical props and analogies to consider future health experiences was employed with outpatient staff, nurses, reception staff and people with MS. Authors found that the combination of participants, their previous experiences and different perspectives and knowledge of the MS service resulted in a collaborative approach to outpatient service improvement.
BMC Health Services Res 2015;15:105. [Ref 19-3-19]
http://tinyurl.com/QMSRU-19-3-19

Unmet needs of multiple sclerosis patients in the community.

Observational study in Ireland included 632 people with MS, 51% with relapsing remitting, 40% secondary progressive and 9% primary progressive. More than 50% reported unmet needs relating to their MS. This was greater in older, single, rural residents with greater EDSS and progressive MS. Physiotherapy was the most frequently reported unmet need and people with secondary progressive MS were most likely to report unmet needs. Authors suggest that non-pharmacological needs are not optimally addressed and identifying these may help inform service planning and lead to development of more equitable MS services.
Mult Scler Relat Disord 2015;4(2):144-50. [Ref 19-3-20]