

Quality of life and cost effectiveness following the use of Functional Electrical Stimulation (FES) of the peroneal nerve for people with multiple sclerosis

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Abstract: There is a large gap in quality of life for people with MS and the general population. FES is an effective intervention for dropped foot reducing falls by 72% (1), with a mean usage of 4.9 years (2). Improving health related quality of life and cost effectiveness are a priority for the national health system in the UK, who have set a cost effectiveness threshold of £20,000(€24,218) per Quality Adjusted Life Year (QALY) under which interventions will be considered. Method: 45 people with multiple sclerosis (mean age 53, range 40-70) and foot drop completed the EQ-5D-5L (Euroqol) quality of life questionnaire before and after using FES for 20 weeks. Index values were calculated using the latest available value set and checked with the crosswalk value set (3). QALY gain was calculated by multiplying the utility value by the average length of time of FES use, discounted at 3.5% per year. The mean cost minus the expected cost saving due to falls prevention was divided by the QALY gain to give the mean net cost per QALY. Results: The mean index value before treatment (0.542) was highly significant compared to after treatment (0.656) ($t=-4.68$, $p< 0.001$), providing a utility value of 0.114 which works out to 0.542 when extrapolated to 4.9 years. The cost of providing FES for 4.9 years is £3095(€3,742)(1), giving a cost per QALY of £5,705(€6,901). However, it is estimated that the reduction of falls may result in a cost saving of £375(€454) per year, bringing the net cost to £1,256(€1,519) and cost per QALY to £2,316(€2,801). Conclusion: These preliminary results must be treated with caution as the data used was taken from three different studies. Nevertheless the analysis indicates that FES is associated with improved health related quality of life and is well within cost effectiveness thresholds.

References:

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