

Effectiveness of Personal Therapy Manager on Spasticity

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INTRODUCTION

Spasticity is a pathological condition of abnormally increased muscle tone and a common sequela of many neurologic conditions. Patients with severe spasticity depend on caregivers and experience physical impairments (e.g., pain, pressure sores, contractures), considerable difficulty in performing the activities of daily living (ADLs), and decreased overall quality of life (1). Baclofen is the primary medication used for spasticity secondary to upper motor neuron pathology (2). Baclofen is a structural analogue of GABA, acting as a GABA-B receptor agonist.(3) Upon binding to the GABA-B receptors, a cascade of events is triggered that includes hyperpolarization of neurons, prevention of calcium influx, facilitation of potassium conductance, and decrease in excitatory neurotransmitter release.

Although oral baclofen is rapidly absorbed in the GI tract, it has a limited ability to cross the blood-brain barrier. In addition, the systemic side effects of sedation, drowsiness, headache, and confusion limit the use of oral baclofen. As an alternative, baclofen can be delivered directly to the cerebrospinal fluid (CSF) in the intrathecal space, bypassing the blood-brain barrier entirely (1). Intrathecal baclofen (ITB) is typically administered by a refillable reservoir and programmable pump implanted surgically in the abdomen. The pump can be programmed to deliver the drug at a continuous rate or at set changing rates throughout the day.

ITB is commonly used to manage spasticity that is refractory to commonly used oral therapies or when oral therapies have unacceptable side effects. Some patients experience intermittent spasms that require supplemental oral baclofen or frequent infusion adjustments to their ITB dose. However, repeated visits for infusion adjustments can become a considerable time commitment and financial burden on patients. The Personal Therapy Manager (myPTM), a Medtronic device for use with the Synchroned II pump, is a hand-held controller originally developed for use with the pump and used for chronic pain management. It is off label for use with the pump with baclofen, but we have found it to be well utilized in the effort to minimize need for spasticity breakthrough oral medications (4). The myPTM delivers set medication bolus on patient demand.

In this study, we aim to examine the effectiveness of myPTM in addition to intrathecal baclofen infusion therapy in controlling intermittent spasms. Additionally, we seek to assess patient satisfaction and determine if we should recommend future use of myPTM in spasticity management to ultimately decrease office calls and visits and increase the quality of life of patients.

RESULTS

Demographic by Diagnosis

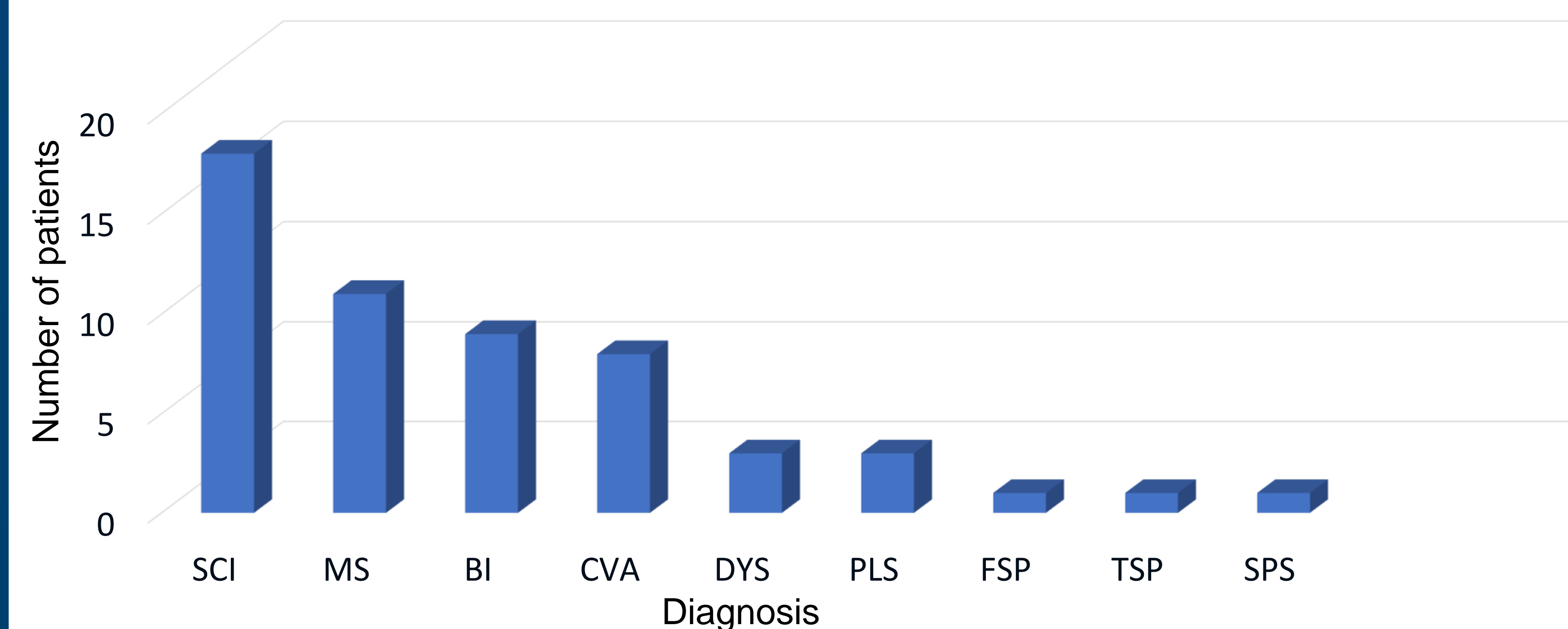


Figure 1. Number of patients with each diagnosis, in descending order. CP- Cerebral Palsy; SCI- Spinal Cord Injury; MS- Multiple sclerosis; CVA- Cerebrovascular accident; DYS- Dystonia; PLS- Primary Lateral sclerosis; BI- Brain injury; FSP- Familial Spastic Paraplegia; TSP-Tropical Spastic Paraparesis; SPS- Stiff person syndrome

Question 1: Do you use your PTM? (Y/N)

Question 2: How often do you use your PTM? (Q2h/QD/FTW/Occ)

Question 3: Does it help with your spasticity? (Y/N)

Question 4: Would you recommend the PTM? (Y/N)

Q2h- every 2 hours/several times a day

QD- Daily/once a day

FTW- Few times a week less than 5x/week

occ- occasionally (1-2 month or less)

PTM Use For Spasticity

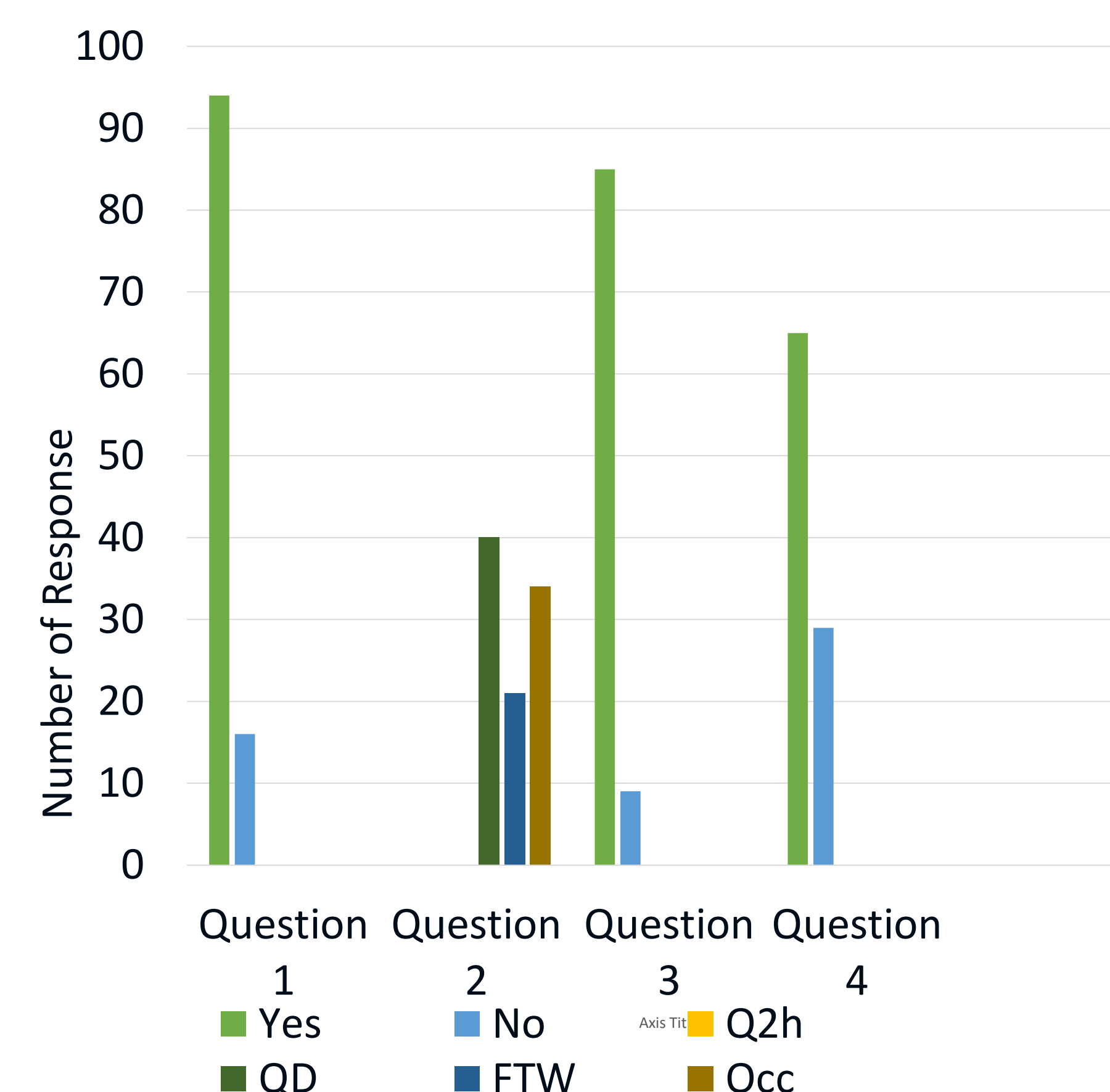


Figure 2. Responses to survey Questions. Q2h- everytwo hours/several times a day; QD= daily/once a day; FTW- Few times a week/less than 5x/week; Occ= occasionally.

Table 1. Survey questions and response key.

DESIGN

This is a cross sectional survey study performed at an academic rehabilitation outpatient clinic. A total of 129 current patients were enrolled with 19 not available for the survey. Standardized surveys were administered during clinic appointments or by phone call.

RESULTS

• Of the 110 available for an interview, 16 (15%) reported no longer using their myPTM. Of the remaining 94 subjects, 85 (90%) reported adequate control of their spasticity, and 65 (69%) would recommend it to others.

CONCLUSIONS

Based on the results of this survey study, Personal Therapy Manager (myPTM) and Intrathecal Baclofen Pump (ITB) seem to provide satisfactory relief of intermittent spasms in patients with severe spasticity. This therapeutic combination should ultimately decrease office visits, decrease financial burden on patients, and improve their quality of life.

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