Spectrum of Movement Disorders in two Movement Disorders Centers in the Philippines

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Abstract

Objective: Presently, there are no epidemiologic data on the prevalence of movement disorders in the Philippines. We aim to describe the most common phenomenologies and movement disorders in two specialty centers in Metro Manila dedicated to movement disorders.

Methods: We investigated the clinical spectrum and etiologies of movement disorders referred to our centers from January 2007-December 2019 using a standardized collection form.

Results: A total of 1438 patients presenting with complaints relating to movement disorders were evaluated between 2007-2019. There were 770 (53.5%) men. The mean age was 57.1 ± 17.9 years. The most common movement disorders were parkinsonism (n=677, 47.1%), myoclonus (n=212, 14.7%) and tremor (n=208, 14.5%). The least common was restless legs syndrome (n=4, 0.3%). There were 78 (37.7% of total dystonia cases) X-linked dystonia-parkinsonism patients referred to our clinic. Majority of the botulinum toxin injections were for hemifacial spasms (n=206). A small number of patients (n=41) were also seen at the center for deep brain stimulation programming.

Conclusion: The most common movement disorders managed were parkinsonism, myoclonus and tremor. The most common diagnoses were Parkinson's disease, hemifacial spasm and essential tremor. This study highlights the spectrum of movement disorders encountered in two specialty clinics in two Philippine tertiary hospitals. Given these varied cases, there is also a need for more movement specialists and centers dedicated to movement disorders to manage these cases.

Keywords: movement disorders, Philippines, XDP, deep brain stimulation, botulinum toxin injections.

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INTRODUCTION

A few centers from different parts of the world have released data on frequency of movement disorders in their respective areas of practice[1–3]. While there are more population-based studies showing the prevalence of specific movement disorders, studies on the overall combined burden of disease are limited. A comprehensive information on the number of patients with movement disorders and the frequencies of these diseases in the Philippines have yet to be reported. There are only six centers dedicated to movement disorders in the Philippines with a population of 109,419,398 all located in Metro Manila with a population of 13,923,452 [4,5] as of May 2020. The movement disorder service in St. Luke's Quezon City started operations in 1998 while Global City in 2010. We thus looked into the clinical spectrum and etiologies of movement disorders referred to our specialty service at St. Luke's Medical Center Quezon City and Global City, Philippines.

PATIENTS AND METHODS

We identified all patients seen from January 2007 to December 2019 at the St. Luke's Medical Center Quezon City and January 2010 to December 2019 at St. Luke's Medical Center Global City. A movement disorder specialist, one clinician as well as two staff nurses reviewed the medical records. The charts of patients who presented with primary complaints of movement disorders were reviewed, with their demographic and clinical characteristics recorded using a standardized data collection form. The presenting movement phenomenology and working diagnosis were obtained. The movement disorders were categorized into the following major groups: parkinsonism, dystonia, tremor, tics, chorea and myoclonus. Classifications were based on the clinician's clinical assessment from consensus criteria [6–14]. Descriptive statistics were performed where appropriate using SPSS version 2.0.

This study was approved by the Institutional Ethics Review Committee of St. Luke's Medical Center (EC Reference No.: CT-16024).

RESULTS

A total of 1438 patients presenting with complaints relating to movement disorders were seen in the 2 centers from 2007-2019. The mean age was 57.1 ± 17.9 years (range, 6-96 years). There were 770 (53.5%) men.

Parkinsonism was the most common group of movement disorders seen in these clinics. A total of 677 cases were seen, accounting for 47.1% of the total cases (Table 1). Of these, Parkinson's disease (PD) (n=606, 90%) remains the most common. The mean age of PD patients was 65.7 ± 12.2 years (range, 51-75 years), while 11 patients had an age of onset younger than 40 years old. A total of 25 PD patients had undergone deep brain stimulation (DBS) and were being seen in the center for programming.

There were 30 cases of secondary parkinsonism (4% of parkinsonism cases), comprised mainly of vascular parkinsonism (n=24, 80%). The most common type of parkinsonism plus syndrome was progressive supranuclear palsy (n=14, 34%) followed by multiple system atrophy (n=10, 24%). The rest of the syndromes seen were dementia with Lewy bodies, Alzheimer's disease with parkinsonism, corticobasal syndrome and frontotemporal dementia with parkinsonism.

Myoclonus comprised 15% of total cases managed in the center. The predominant disease entity was hemifacial spasm (HFS), accounting for 97.2% of the cases of myoclonus (n= 206) with a mean age of 48.9 ± 11.4 years (range, 20-76) years. Majority of HFS patients were females (n=146, 71%). The other cases seen were propriospinal myoclonus (n=4, 2%) and post-hypoxic myoclonus (n=2, 1%).

A total of 212 cases of tremor were seen, accounting for 15% of total cases. The most common type of tremor was essential tremor (ET) (n=127, 61%), followed by enhanced physiologic tremor (n=74, 58%). The other types were Holmes', drug-induced and palatal tremor.

Dystonia (n= 207) made up 14% of the total cases. Majority (n=98, 47%) of the cases was primary dystonia of the focal type. The most common type of focal dystonia seen was cervical dystonia (n=68), approximately 69% of focal dystonias, all of whom have undergone botulinum toxin injections at least once. This was followed by limb dystonia (n=16, 16%), 8 of whom underwent botulinum

Table 1. Most commonly encountered movement disorders seen at the Movement Disorders Service, St. Luke's Medical Center Quezon City and Global City

Types of Movement Disorders	TOTAL N=1438 (%)
PARKINSONISM	677 (47.1%)
A. Parkinson's disease	606 (42.1%)
B. Secondary parkinsonism	30 (2.1%)
C. Parkinsonism Plus	41 (2.9%)
- Progressive supranuclear palsy	14 (1.0%)
- Multiple system atrophy	10 (0.7%)
- Dementia with Lewy bodies	7 (0.5%)
- Alzheimer disease with parkinsonism	5 (0.3%)
- Corticobasal syndrome	3 (0.2%)
- Frontotemporal dementia	2 (0.1%)
MYOCLONUS	212 (14.7%)
A. Hemifacial spasm	206 (14.3%)
B. Propriospinal	4 (0.3%)
C. Post-hypoxic	2 (0.1%)
TREMOR	208 (14.5%)
A. Essential	127 (8.8%)
B. Enhanced physiologic	74 (5.1%)
C. Holmes'/ Rubral	2 (0.1%)
D. Drug-induced	1 (0.07%)
E. Palatal	1 (0.07%)
DYSTONIA	207 (14.4%)
Primary	
A. Focal	98 (6.8%)
- Cervical	68 (4.7%)
- Limb dystonia	16 (1.1%)
- Blepharospasm	8 (0.6%)
- Writer's cramp	2 (0.14%)
- Laryngeal dystonia	2 (0.14%)
- Bruxism	2 (0.14%)
B. Segmental	16 (1.1%)
- Meige's syndrome	12 (0.8%)
- Craniocervical	4 (0.3%)
C. Multifocal	2 (0.14%)
D. Generalized	80 (5.6%)
- X-linked dystonia-parkinsonism	78 (5.5%)
- Generalized	2 (0.14%)
Secondary (Perinatal cerebral injury)	6 (0.4%)
Paroxysmal kinesigenic dyskinesia	5 (0.3%)
TICS	46 (3.2%)
A. Chronic motor tics	34 (2.4%)
B. Tourette's syndrome	12 (0.9%)
FUNCTIONAL MOVEMENT DISORDERS	15 (1.1%)
CHOREA	8 (0.6%)
A. Syndenham chorea	3 (0.2%)
B. Huntington disease	2 (1.4%)
C. Generalized	2 (1.4%)
D. Hemichorea	1 (0.1%)
RESTLESS LEGS SYNDROME	4 (0.3%)

toxin injections and blepharospasm (n=8, 8%) with 7 undergoing botulinum toxin injections. Writer's cramp, laryngeal dystonia and bruxism were encountered less frequently. Other dystonias seen were of the segmental type: Meige's syndrome (n=12), of which only 2 had botulinum toxin injection and multifocal types (n=2, 0.14%) and craniocervical dystonia (n=4). There were 80 cases (38% of all dystonias) of the generalized type with X-linked dystonia-parkinsonism (XDP) making up the majority (n=78), accounting for 38% of all dystonias. The mean age of onset was 41.2 ± 8.1 (range, 25-61 years) and all the affected individuals were male. They presented initially with focal dystonia associated with parkinsonism. A small number (n=16) of these XDP patients have undergone pallidal DBS and were being seen in the center for programming. Several XDP patients (n=38) have also had botulinum toxin injections. There were 6 cases of secondary dystonias, all with an etiology of perinatal cerebral injury, making up 3% of all dystonias seen in this study.

The less commonly encountered movement disorders were tics (n=46, 3%), functional movement disorders (n=15, 1%) and chorea (n=8, 0.6%), restless legs syndrome (n=4, 0.3%). Tics comprised 3% of total cases, with chronic motor tics (n=34, 2%) being the more common type. Only 4 cases of restless legs syndrome were seen.

Functional movement disorders (n=15, 1%) were also seen, mostly appearing as involuntary movements resembling tremor and myoclonus.

Among the pediatric population, chronic motor tics (n=18) was the most common disease entity seen. This was followed by Tourette syndrome (n=8), secondary dystonia from cerebral palsy (n=6), paroxysmal kinesigenic dyskinesia (n=5), and essential tremor (n=4) and Sydenham's chorea. (n=3).

DISCUSSION

There are currently no recent epidemiologic studies on the prevalence of movement disorders in the Philippines. The paucity of local data is likely due to the unavailability of a centralized system for census collection between both private and government hospitals and information collection remains to be hospital based. A study in 2007 showed a 0.95% prevalence of parkinsonism in the Philippines [15] In an article, there were 92 Filipino PD patients (total, 367) who developed drug-induced dyskinesias [16]. The high rate of dyskinesias should have translated to more DBS being performed. However, only 26 PD patients have undergone subthalamic or pallidal DBS, 17 of whom has been reported [17]. Parkinsonism remains the most frequently seen clinical presentation among movement disorders, similar to other reports [1,3,18]. Our results of ET comprising 8.8% were comparable to a study done in Thailand (8.1%) and Singapore (9.1%) [3,18]. Similar to their data, majority of the cases in our movement disorders center comprised of parkinsonism.

Among the types of dystonia, focal dystonia was also the most frequently encountered, similar to studies done in Singapore and Japan [19,20]. One remarkable difference with our census from the other censuses reported is that we see XDP patients. XDP is a debilitating movement disorder that is endemic to the Philippines [21]. These patients were referred to or being managed in our specialty center mainly for botulinum toxin injections and DBS programming which has been shown to be effective in controlling dystonia among XDP patients [22,23].

Another disease entity that was not commonly seen in other movement center reports was HFS, which comprised 15% of the total cases seen in our center. The mean age of our patients was 48.9 ± 11.4 years and the demographics were comparable in some ways to previous studies [24–26]. Symptoms were also seen more frequently on the left side of the face, consistent with literature [27,28]. Several studies have alluded to the observation that HFS is more common in Asians which may explain the findings in our center when compared to previous reports [27,29,30]. Numerous reports on centers that conducted studies on hemifacial spasm were dedicated to the efficacy of botulinum toxin among recruited subjects but did not report the relative frequency of these patients seen in their referral centers [31–33].

Previous studies have highlighted the non-optimal management of movement disorders in their centers given the limitations in affordability, treatment availability as well as low movement disorders specialist to population ratio [1–3]. Despite these circumstances, patients still seek treatment for symptoms of movement disorders. Given the varied movement disorders cases we see in this specialty

center, our data support the need for awareness of the different movement disorders by health professionals for timely referral to the movement center. More importantly, our study emphasizes the need for specialized training in movement disorders by neurologists. There are currently only nine movement disorders specialists in the Philippines for a population of close to 109 million and most of them practice in Manila, where movement centers are situated [34]. One difficulty in the Philippine healthcare services for patients with movement disorders is a decentralized system with none of the Department of Health's programs targeted to PD. Filipinos pay out of pocket for healthcare services with approximately only 30% the population able to afford healthcare fees [35].

Our study has several limitations. There are other movement disorders center/ clinics that also cater to movement disorders patients. Another limitation is that some patients with mild symptoms may opt not to seek consult in a movement specialty center and some who are already being managed by other neurologists are no longer referred to our movement center. Furthermore, these data were collected from a tertiary center with a clinic-based design and numbers may not be reflective of the actual numbers in the community. Nevertheless, we have seen and managed patients in our movement centers from all the different regions in the Philippines.

CONCLUSION

Despite these limitations, this was an extensive review of cases seen in a movement disorders center over a period of 12 years. It was the first to describe the spectrum of movement disorders in the Philippines. There was a predominance of parkinsonism, myoclonus and tremors, with PD, HFS and ET as the most common diagnoses. Given these varied cases, there is also a need for more movement specialists and centers dedicated to movement disorders to manage these cases.

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