to botulinum toxin at enrollment in CD PROBE (CD Patient Registry for Observation of BOTOX® Efficacy) were evaluated. **Methods:** Patients were included if they completed all three treatment cycles and had accompanying data in this prospective, observational study. Assessments included CD severity, Cervical Dystonia Impact Profile (CDIP-58), Toronto Western Spasmodic Torticollis Rating Scale (TWSTRS), treatment interval, total dose, and adverse events (AEs). **Results:** Changes in severity following each onabotulinumtoxinA treatment were generally similar between naïve (n=212) and non-naïve (n=138) patients. Severity scores were maintained or improved in most patients with mild/moderate symptoms, while 30.0-66.7% with the highest severity scores shifted to a lower score across treatments. Sustained improvements were seen in all CDIP-58 subscales and TWSTRS total scores irrespective of baseline CD severity and toxin status. The median time interval between injections was similar in naïve (93.0–98.0 days) and non-naïve patients (96.0–97.0 days); doses tended to be lower in naïve patients. The most common AEs (dysphagia, muscular weakness) were similar. **Conclusions:** CD severity was attenuated by repeat onabotulinumtoxinA treatments at consistent intervals regardless of prior botulinum toxin exposure. Treatments were well tolerated.

P.038

Impact of Disease Severity on Presentation Subtype and OnabotulinumtoxinA Utilization in Patients with Cervical Dystonia in the CD PROBE Completer Population

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doi: 10.1017/cjn.2021.320

Background: The impact of cervical dystonia (CD) severity on presentation subtype and onabotulinumtoxinA utilization was examined in the completer population from CD PROBE (CD Patient Registry for Observation of BOTOX® Efficacy). **Methods:** In this multicenter, prospective, observational registry, patients with CD were treated with onabotulinumtoxinA according to injectors' standard of care. Completers were patients that completed all 3 treatment sessions and had accompanying data. **Results:** Of N=1046 patients enrolled, n=350 were completers. Completers were on average 57.3 years old, 74.9% female, 94.6% white, and 60.6% toxin-naïve. Baseline severity was mild in 32.6%, moderate in 54.3%, and severe in 13.1%. Torticollis was the most common presentation at baseline (mild: 44.7%, moderate: 55.8%, severe: 63.0%), followed by laterocollis (mild: 42.1%, moderate: 32.6%, severe: 26.1%). Median onabotulinumtoxinA dose increased over time; 160U–200U for torticollis and 170U–200U for laterocollis. For all severities, median total dose increased from injection 1 to injection 3 (mild: 138U–165U, moderate: 183U–200U, severe: 200U–285U). Eighty-one patients (23.1%) reported 139 treatment-related adverse events. There were no treatment-related serious adverse eventsand no new safety signals. **Conclusions:** CD severity impacted presentation subtype frequency and onabotulinumtoxinA utilization in CD PROBE, with higher and tailored dosing observed over time and with increasing disease severity.

P.040

Prognosis in Arm and Leg Tremor Onset Parkinson Disease

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doi: 10.1017/cjn.2021.321

Background: There is no biological marker of progression in early Parkinson Disease (PD). Upper limb (UL) tremor is the most common motor symptom at onset. The significance of lower limb (LL) tremor remains unknown. We report on longitudinally followed autopsy-verified PD tremor onset cases. **Methods:** A chart review of longitudinally followed autopsy-verified PD cases was performed. Age and mode of onset were recorded at initial evaluation. Prognosis was measured by change in Hoehn and Yahr scale while on levodopa (LD). **Results:** Fourty-nine patients were included. Thirty-eight cases had upper limb (UL), four lower limb (LL), and seven upper and lower limb (ULL) onset tremor. UL had 86.8% response to LD, LL 50% and ULL 85.7%. Sub-analysis of UL responders found 20% mild improvement, 53.3% moderate and 26.7% marked. ULL had moderate response in 83.3% and marked in 16.7%. LL responders only had mild improvement with LD. **Conclusions:** Tremor onset is most common in UL, followed by ULL and then LL. LL onset tremor cases have an inferior response to LD when compared to UL and ULL cases.

P.041

First Degree Movement Disorders Cases and Research

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doi: 10.1017/cjn.2021.322

Background: While researchers pursue the etiology, pathophysiology and treatment of movement disorders, presently there is no biological marker for the two most common disorders – essential tremor (ET), and Parkinson's disease and variants (Parkinson syndrome, or PS). The diagnosis of each remains clinical, but definitive diagnosis is made on brain pathology. Population epidemiological studies are hampered by a lack of diagnostic precision. Twins with the same disorder are scarce, and the next best option is studies of well-documented first-degree family members. **Methods:** Patients were seen at the Saskatchewan Movement Disorders Program (SMDP). All autopsied cases with known clinicopathological diagnosis of a movement disorder between 1970 and 2019 were reviewed. Only those with a first-degree family member – parent, child, and/or sibling - with a movement disorder were included. **Results:** 671 cases with movement disorders seen at SMDP have been autopsied. 29 cases including probands were found and thirteen first-degree families were identified; eight families were multiple (2 or more) siblings and five families included one parent/one child. In seven families, the diagnosis was concordant. **Conclusions:** Movement disorders in first degree relatives with autopsied verified diagnosis are dissimilar in nearly half the cases. Such small intensively studied groups offer unique research opportunities.