**Appendix I**

**Bladder Medications Prescribed**

* Anti-muscarinics/anti-cholingerics
* Alpha blocker
* Alfa agonist
* Daily antibiotic
* Probiotic

**Urology Surgery Types**

* Bladder Augmentation
* Continent Catheterizable Channel
* Incontinent Urinary Diversion
* Botulinum Toxin, chemodenervation injection
* Correction of vesicoureteral reflux
* Bladder outlet procedure
* Injection of bulking agent
* Nephrostomy tube

**Appendix II**

For 2553 patients who had a history of urologic surgery, we retrospectively examined their bladder continence status in relation to starting CIC prior to any urologic surgery. Among these, 1093 had registry visit(s) before surgery. After restricting their last pre-surgery visit by age >5 years, those who had impaired bladder, and those with responses in Version 2 of the dataset, only 380 patients remained in the sample. Three patients’ CIC initiation age date were reclassified (i.e., each originally answered “Never started CIC” when asked but started CIC later and thus were categorized correctly based on the age at which they started CIC). Prior to any urologic surgery, none of the 35 patients who Never Started CIC were continent, compared to 22.3% for those who initiated CIC at different ages. Specifically, 23.6% of those who started CIC < 3 years of age were continent, 23.2% of those who started CIC between 3-5 years of age, 18% of those who started CIC between 6-11 years of age, and 14.3% among those who started CIC >12 years of age. Based on the analysis of this subsample, after removing the potential effect of urologic surgeries on bladder continence, the finding is consistent with results when utilizing our entire study sample.

**Supplement table 2. Bladder continence status by age CIC started among 380 patients whose continence status was assessed prior to any urologic surgery. The National Spina Bifida Patient Registry, 2013-2018.**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **N=380** | **N (%) by bladder continence status** | |
| **Yes**  **(n=77)** | **No**  **(n = 303)** |
| **Age CIC began (Years)** |  |  |  |
| Younger than 3 | 212 | 50 (23.6) | 162 (76.4) |
| 3 to 5 | 69 | 16 (23.2) | 53 (76.8) |
| 6 to 11 | 50 | 9 (18.0) | 41 (82.0) |
| 12 and older | 14 | 2 (14.3) | 12 (85.7) |
| Never | 35 | 0 (0) | 35 (100) |