**Table. Supplemental Digital Content 14. Disease states and association with high rectal perception thresholds in female patients (n=1481); N (% of disease state; % of low perception threshold), univariate and multivariate analysis, data presented as odds ratio (95% confidence interval) with indication of p-value (no indication if p≥0.05).**

|  | **High threshold to first perception****N=253/1481 (17%)** | **High threshold to urge perception****N=261/1481 (18%)** | **High threshold to maximal tolerated perception****N=156/1481 (11%)** | **At least 1 high perception threshold** **N=401/1481 (27%)** | **At least 2 high perception thresholds** **N=202/1481 (14%)** | **High threshold to all three perception thresholds****N=67/1481 (5%)** |
| --- | --- | --- | --- | --- | --- | --- |
| **Univariate analysis** | **Multivariate analysis** | **Univariate analysis** | **Multivariate analysis** | **Univariate analysis** | **Multivariate analysis** | **Univariate analysis** | **Multivariate analysis** | **Univariate analysis** | **Multivariate analysis** | **Univariate analysis** | **Multivariate analysis** |
| **Reason for performing perception testing** |
| **Symptoms of constipation****N=568/1481 (38%)** | N=145 (57%;26%)2.6\*\*\*(1.9-3.4) | 2.1\*\*\*(1.6-2.9) | N=159 (61%;28%)+3.1\*\*\*(2.3-4.1) | 3.2\*\*\*(2.2-4.7) | N=108 (69%;19%)4.2\*\*\*(2.9-6.1) | 3.4\*\*\*(2.3-5.0) | N=226 (56%;40%)2.8\*\*\*(2.2-3.5) | 2.3\*\*\*(1.8-3.0) | N=134 (66%;24%)3.8\*\*\*(2.8-5.3) | 3.4\*\*\*(2.4-4.8) | N=52 (78%;9%)6.0\*\*\*(3.4-10.8) | 5.3\*\*\*(2.7-10.0) |
| **Symptoms of fecal incontinence****N=781/1481 (53%)** | N=108 (43%;14%)0.6\*\*\*(0.5-0.8) |  | N=102 (39%;31%)0.5\*\*\*(0.4-0.7) |  | N=62 (40%;8%)0.6\*\*(0.4-0.8) |  | N=170 (42%;22%)0.6\*\*\*(0.4-0.7) |  | N=80 (40%;10%)0.5\*\*\*(0.4-0.7) |  | N=22 (33%;3%)0.4\*\*(0.3-0.7) |  |
| **Assessment following obstetric injury****N=260/1481 (17%)** | N=32 (13%;12%)0.6\*(0.4-0.9) |  | N=34 (13%;13%)0.7\*(0.4-0.9) | 1.8\*(1.0-3.1) | N=13 (8%;5%)0.4\*\*(0.2-0.7) |  | N=56 (14%;22%)0.7\*(0.5-0.9) |  | N=19 (9%;7%)0.5\*\*(0.3-0.7) |  | N=4 (6%;2%)0.3\*(0.1-0.8) |  |
| **Rome diagnosis** |
| **Irritable bowel syndrome****N=504/1481 (34%)** | N=95 (38%;19%)1.2(0.9-1.6) |  | N=94 (36%;19%)1.1(0.8-1.5) |  | N=62 (40%;12%)1.4(0.9-1.9) |  | N=145 (36%;29%)1.1(0.9-1.5) |  | N=74 (37%;15%)1.2(0.8-1.6) |  | N=32 (48%;6%)1.8\*(1.1-2.9) |  |
| **Chronic constipation****N=351/1481 (24%)** | N=68 (27%;19%)1.2(0.9-1.7) |  | N=77 (30%;22%)1.4\*(1.1-1.9) |  | N=49 (31%;14%)1.5\*(1.0-2.2) |  | N=116 (29%;33%)1.5\*\*(1.1-1.9) |  | N=60 (30%;17%)1.4\*(1.0-2.0) |  | N=18 (27%;5%)1.2(0.7-2.0) |  |
| **Functional defecation disorder (symptoms)****N=745/1481 (50%)** | N=150 (59%;20%)1.6\*\*(1.2-2.0) |  | N=164 (63%;22%)1.8\*\*\*(1.4-2.4) |  | N=105 (67%;14%)2.2\*\*\*(1.6-3.2) |  | N=239 (60%;32%)1.7\*\*\*(1.3-2.1) |  | N=132 (65%;18%)2.0\*\*\*(1.5-2.8) |  | N=48 (72%;6%)2.6\*\*(1.5-4.4) |  |
| **Fecal incontinence****N=727/1481 (49%)** | N=110 (44%;15%)0.7\*(0.6-0.9) |  | N=102 (39%;14%)0.6\*\*(0.5-0.8) |  | N=68 (44%;9%)0.8(0.6-1.1) |  | N=168 (42%;23%)0.7\*\*(0.5-0.8) | 0.8\*(0.5-0.9) | N=86 (43%;12%)0.8(0.6-1.0) |  | N=26 (39%;4%)0.6(0.4-1.0) |  |
| **Background medical condition/ medications** |
| **Inflammatory bowel disease (quiescent)****N=18/1481 (1%)** | N=3 (1%;17%)0.9(0.3-3.3) |  | N=4 (2%;22%)1.3(0.4-4.1) |  | N=3 (2%;17%)1.7(0.5-5.9) |  | N=4 (1%;22%)0.8(0.3-2.3) |  | N=3 (2%;17%)1.3(0.4-4.4) |  | N=3 (5%;17%)4.4\*(1.2-15.5) | 8.9\*\*(1.9-40.9) |
| **Connective tissue disease****N=28/1481 (2%)** | N=3 (1%;11%)0.6(0.2-1.9) |  | N=3 (1%;11%)0.6(0.2-1.9) |  | N=2 (1%;7%)0.6(0.2-2.8) |  | N=3 (1%;11%)0.3(0.1-1.1) |  | N=3 (2%;11%)0.8 (0.2-2.5) |  | N=2 (3%;7%)1.6(0.4-7.1) |  |
| **Diabetes mellitus****N=32/1481 (2%)** | N=5 (2%;16%)0.9(0.3-2.4) |  | N=6 (2%;19%)1.1(0.4-2.7) |  | N=4 (3%;13%)1.2(0.4-3.5) |  | N=9 (2%;28%)1.1(0.5-2.3) |  | N=4 (2%;13%)0.9(0.3-2.6) |  | N=2 (3%;6%)1.4(0.3-6.0) |  |
| **Neurological disorder****N=13/1481 (1%)** | N=3 (1%;23%)1.5(0.4-5.3) |  | N=0 (0%;0%)NA |  | N=2 (1%;15%)1.6(0.3-7.0) |  | N=4 (1%;31%)1.2(0.4-3.9) |  | N=1 (0.5%;8%)0.5(0.1-4.1) |  | N=0 (0%;0%)NA |  |
| **Multiple sclerosis****N=8/1481 (0.5%)** | N=0 (0%;0%)NA |  | N=1 (0.5%;13%)0.7(0.1-5.4) |  | N=0 (0%;0%)NA | = | N=1 (0.5%;13%)0.4(0.1-3.1) |  | N=0 (0%;0%)NA |  | N=0 (0%;0%)NA |  |
| **Psychiatric Medications****N=168/1481 (11%)** | N=35 (14%;21%)1.3(0.9-1.9) |  | N=34 (13%;20%)1.2(0.8-1.8) |  | N=21 (14%;13%)1.2(0.8-2.0) |  | N=54 (14%;32%)1.3(0.9-1.9) |  | N=28 (14%;17%)1.3(0.8-2.0) |  | N=8 (12%;5%)1.1(0.5-2.3) |  |
| **Gut-specific neuro-modulatory medications****N=132/1481 (9%)** | N=32 (13%;24%)1.6\*(1.1-2.5) |  | N=29 (11%;22%)1.4(0.9-2.1) |  | N=19 (12%;14%)1.5(0.9-2.5) |  | N=46 (12%;35%)1.5\*(1.0-2.2) |  | N=25 (12%;19%)1.5(0.9-2.5) |  | N=9 (13%;7%)1.6(0.8-3.4) |  |
| **Previous procedures** |
| **Multipara****N=1207/1481 (82%)** | N=197 (78%;16%)0.8 (0.5-1.1) |  | N=194 (74%;16%)0.6\*\*(0.4-0.8) |  | N=117 (75%;10%)0.6\*(0.4-0.9) |  | N=308 (77%;26%)0.7\*\*(0.5-0.9) |  | N=151 (75%;13%)0.6\*\*(0.4-0.9) |  | N=49 (73%;4%)0.6(0.3-1.0) |  |
| **Obstetrics associated anal sphincter injury** **N=290/1481 (20%)** | N=35 (14%;12%)0.6\*(0.4-0.9) |  | N=36 (14%;12%)0.6\*(0.4-0.9) |  | N=17 (11%;6%)0.5\*\*(0.3-0.8) |  | N=62 (16%;21%)0.7\*(0.5-9.3) |  | N=21 (10%;7%)0.4\*\*(0.3-0.7) |  | N=5 (8%;2%)0.3\*(0.1-0.8) |  |
| **Anal surgery****N=95/1481 (6%)** | N=12 (5%;13%)0.7(0.3-1.3) |  | N=13 (5%;14%)0.7(0.4-1.3) |  | N=10 (6%;11%)0.9(0.5-1.9) |  | N=20 (5%;21%)0.7(0.4-1.2) |  | N=11 (5%;12%)0.8(0.4-1.6) |  | N=4 (6%;4%)0.9(0.3-2.6) |  |
| **Spinal cord injury/surgery****N=49/1481 (3%)** | N=17 (7%;35%)2.7\*\*(1.5-4.9) |  | N=21 (8%;43%)3.7\*\*\*(2.1-6.7) |  | N=15 (10%;31%)4.0\*\*\*(2.1-7.6) | 2.2\*(1.0-4.8) | N=25 (6%;51%)2.9\*\*\*(1.7-5.2) |  | N=18 (9%;37%)3.9\*\*\*(2.2-7.2) |  | N=10 (15%;20%)6.2\*\*\*(2.9-13.0) | 2.8\*(1.1-7.4) |
| **Rectal surgery****N=58/1481 (4%)** | N=17 (7%;29%)2.1\*(1.2-3.7) |  | N=11 (4%;19%)1.1(0.6-2.1) |  | N=8 (5%;14%)1.4(0.6-2.9) |  | N=22 (6%;38%)1.7(0.9-2.9) |  | N=10 (5%;17%)1.3(0.7-2.7) |  | N=4 (6%;7%)1.6(0.6-4.6) |  |
| **Colon (non-rectal) surgery****N=27/1481 (2%)** | N=4 (2%;15%)0.8(0.3-2.5) |  | N=5 (2%;19%)1.1(0.4-2.8) |  | N=1 (0.5%;4%)0.3(0.1-2.4) |  | N=6 (2%;22%)0.8(0.4-1.9) |  | N=4 (2%;15%)1.1(0.4-3.2) |  | N=0 (0%;0%)NA |  |
| **Hysterectomy****N=297/1481 (20%)** | N=54 (21%;18%)1.1(0.8-1.5) |  | N=50 (19%;17%)0.9(0.7-1.3) |  | N=30 (19%;10%)0.9(0.6-1.4) |  | N=76 (19%;26%)0.9(0.7-1.2) |  | N=43 (21%;15%)1.1(0.8-1.6) |  | N=15 (22%;5%)1.2(0.6-2.1) |  |
| **Pelvic (non-rectal) surgery****N=231/1481 (16%)** | N=47 (19%;20%)1.3(0.9-1.8) |  | N=44 (17%;19%)1.1(0.8-1.6) |  | N=28 (18%;12%)1.2(0.8-1.9) |  | N=69 (17%;30%)1.2(0.9-1.6) |  | N=38 (19%;17%)1.3(0.9-1.9) |  | N=12 (18%;5%)1.2(0.6-2.3) |  |
| **Pelvic radiation****N=12/1481 (1%)** | N=1 (0.5%;8%)0.4(0.1-3.4) |  | N=1 (0.5%;8%)0.4(0.1-3.3) |  | N=1 (0.5%;8%)0.8(0.1-6.0) |  | N=2 (0.5%;17%)0.5(0.1-2.5) |  | N=1 (0.5%;8%)0.6(0.1-4.5) |  | N=0 (0%;0%)NA |  |
| **Mood disorder – hospital anxiety and depression (HAD)** |
| **HAD depression abnormal (>7)****N=235/1481 (16%)** | N=50 (20%;21%)1.4(0.9-1.9) | 0.5\*(0.3-0.9) | N=48 (18%;20%)1.3(0.9-1.8) | 0.5\*(0.3-0.9) | N=25 (16%;11%)0.9(0.6-1.6) |  | N=75 (19%;32%)1.4\*(1.0-1.8) |  | N=38 (19%;16%)1.3(0.9-1.9) | 0.4\*(0.2-0.9) | N=10 (15%;4%)0.9(0.5-1.8) | 0.1\*\*\*(0.1-0.4) |
| **HAD- anxiety abnormal (>7)****N=501/1481 (34%)** | N=98 (39%;20%)1.3(0.9-1.7) |  | N=95 (36%;19%)1.2(0.9-1.6) |  | N=52 (33%;10%)0.9(0.7-1.4) |  | N=239 (60%;26%)1.1(0.9-1.4) |  | N=76 (38%;15%)1.2(0.9-1.6) |  | N=27 (40%;5%)1.3(0.8-2.1) |  |
| **Anorectal manometry physiology testing** |
| **Paradoxical anal contraction on push****N=977/1481 (66%)** | N=156 (62%;16%)0.8(0.6-1.1) |  | N=158 (61%;16%)0.8(0.6-1.0) | 0.7\*(0.5-0.9) | N=103 (66%;11%)1.0(0.7-1.4) |  | N=250 (62%;26%)0.8(0.6-1.0) | 0.7\*(0.6-0.9) | N=128 (63%;13%)0.9(0.7-1.2) |  | N=39 (58%;4%)0.7(0.4-1.2) |  |
| **Unable to expel rectal balloon (> 20 sec)****N=481/1481 (33%)** | N=102 (40%;21%)1.5\*\*(1.2-2.1) | 1.4\*(1.0-1.9) | N=113 (43%;24%)2.4\*\*\*(1.8-3.4) |  | N=68 (44%;14%)1.8\*\*(1.3-2.5) |  | N=161 (40%;34%)1.6\*\*\*(1.3-2.1) |  | N=90 (45%;19%)1.9\*\*\*(1.4-2.6) |  | N=32 (48%;7%)2.2\*\*(1.3-3.6) |  |
| **Unable to expel rectal balloon (> 60 sec)****N=228/1481 (15%)** | N=57 (23%;25%)1.8\*\*\*(1.3-2.6) |  | N=69 (26%;30%)1.8\*\*\*(1.4-2.4) | 2.1\*\*\*(1.4-3.1) | N=37 (24%;16%)1.9\*\*(1.3-2.9) |  | N=89 (22%;39%)2.0\*\*\*(1.5-2.6) | 1.8\*\*(1.3-2.5) | N=58 (29%;25%)2.7\*\*\*(1.9-3.8) | 2.2\*\*\*(1.5-3.4) | N=16 (24%;7%)1.9\*(1.1-3.4) |  |

\*0.01<p<0.05; \*\*0.001<p<0.01; \*\*\*p<0.001

HAD – hospital anxiety and depression questionnaire; NA- no patients in this subgroup.