

Appendix Table 1. Description of Generalized Estimating Equations (GEE)

GEE were developed to account for correlation in repeated measures per participant when fitting generalized linear models, such as linear, logistic, or Poisson regression. Model fitting by GEE includes specification of a working correlation matrix that does not need to be correctly specified to obtain valid statistical inference. Complete model specification and estimation have been described<sup>1</sup>.

1. Zeger, S.L., Liang, K.Y. and Albert, P.S., 1988. Models for longitudinal data: a generalized estimating equation approach. *Biometrics*, pp.1049-1060.

Appendix Table 1 (Main Text Figure 1). Model-based estimates of mean change per GRA response category, marginalized over months 3 and 6

GRA Response	Pain Severity		Urinary Severity	
	Estimate	95%CI	Estimate	95% CI
Markedly Worse	4.0	(2.1, 5.9)	2.5	(1.0, 4.1)
Moderately Worse	1.2	(-0.0, 2.5)	0.1	(-0.9, 1.1)
Slightly Worse	0.4	(-0.3, 1.1)	0.2	(-0.4, 0.8)
No Change	-1.1	(-1.5, -0.6)	-0.5	(-0.9, -0.1)
Slightly Improved	-2.6	(-3.2, -2.0)	-1.4	(-1.8, -0.9)
Moderately Improved	-4.3	(-5.0, -3.7)	-2.1	(-2.6, -1.5)
Markedly Improved	-6.8	(-7.7, -5.9)	-3.5	(-4.2, -2.8)

Appendix Table 2 (Main Text Figure 2). P-values for test of difference in model-based estimates of mean change among ‘markedly improved’ participants by subgroup defining variables. P < 0.05 indicates a significant difference in mean change among the ‘markedly improved’ across levels of the subgroup defining variable.

Subgroup Variable	Pain Severity		Urinary Severity	
	Absolute	Percent	Absolute	Percent
Sex-diagnosis	0.06	0.48	<0.001	0.002
Hunner Lesion	<0.001	0.38	0.19	0.08
Pain type	<0.001	0.11	0.06	0.67
Widespreadness	0.43	0.57	0.15	0.67
Bothersome symptom	0.23	0.30	0.65	0.48
Baseline tertile	<0.001	0.01	<0.001	0.26

Appendix Table 3. ROC-based Thresholds for Brief Pain Inventory Item 6 and Genitourinary Pain Index Item 4 using ‘Markedly Improved’ as the Definition of Responder

			Absolute Change		Percent Change		Attained Level	
			CID	AUC	CID	AUC	CID	AUC
BPI-6	Subgroup	Overall	-2	0.68	-30	0.69	2	0.77
	Sex Diagnosis	Male CP/CPPS Only	-2	0.81	-55	0.82	1	0.84
		Male with IC/BPS	-1	0.61	-15	0.63	2	0.78
	Hunner Lesions	Female	-2	0.67	-25	0.68	2	0.76
		Yes	-2	0.82	-35	0.85	2	0.80
	PainDETECT Type	No	-1	0.65	-20	0.66	2	0.76
		Likely Neuropathic	-1	0.56	-15	0.59	2	0.69
	Most Bothersome Symptom Type	Likely Non-neuropathic	-2	0.73	-35	0.71	1	0.77
		PPS Bother	-2	0.75	-30	0.78	2	0.81
	Widespreadness	USS Bother	-1	0.63	-30	0.61	1	0.70
		Widespread	-2	0.69	-25	0.69	3	0.74
	Baseline Tertile	Localized	-2	0.68	-35	0.69	1	0.78
		Low tertile	-1	0.66	-5	0.59	1	0.67
		Middle Tertile	-2	0.8	-30	0.8	2	0.8
		High Tertile	-3	0.78	-35	0.77	4	0.8
GUPI-4	Subgroup	Overall	-2	0.74	-35	0.77	2	0.79
	Sex	Male CP/CPPS Only	-2	0.74	-35	0.73	2	0.77
		Male with IC/BPS	-2	0.70	-30	0.70	3	0.74
		Female	-2	0.75	-45	0.8	2	0.82
	Hunner Lesions	Yes	-3	0.89	-45	0.88	2	0.86
		No	-2	0.80	-35	0.85	2	0.85
	PainDETECT Type	Likely Neuropathic	-3	0.82	-45	0.88	3	0.86
		Likely Non-neuropathic	-2	0.73	-35	0.73	2	0.74
	Most Bothersome Symptom Type	PPS Bother	-2	0.76	-35	0.8	3	0.83
		USS Bother	-2	0.7	-45	0.73	1	0.73
	Widespreadness	Widespread	-2	0.79	-35	0.8	3	0.78
		Localized	-2	0.71	-45	0.75	2	0.8
	Baseline Tertile	Low tertile	-1	0.69	-30	0.68	1	0.71
		Middle Tertile	-3	0.89	-45	0.89	2	0.89
High Tertile		-4	0.93	-55	0.93	3	0.92	

Appendix Table 4. ROC-based Thresholds for Pelvic Pain Severity and Urinary Symptom Severity using 'Markedly Improved' as the Definition of Responder and Participants with GUPI-4  $\geq$  4 at Baseline

			Absolute Change		Percent Change		Attained Level	
			CID	AUC	CID	AUC	CID	AUC
PPS	Subgroup	Overall	-5	0.82	-30	0.83	11	0.84
	Sex Diagnosis	Male CP/CPPS Only	-5	0.8	-34	0.8	9	0.86
		Male with IC/BPS	-3	0.73	-15	0.71	12	0.81
	Hunner Lesions	Female	-6	0.86	-35	0.87	12	0.85
		Yes	-6	0.9	-30	0.88	12	0.93
	PainDETECT Type	No	-4	0.85	-30	0.84	13	0.85
		Likely Neuropathic	-7	0.88	-35	0.88	13	0.84
	Most Bothersome Symptom Type	Likely Non-neuropathic	-5	0.8	-30	0.8	11	0.81
		PPS Bother	-5	0.82	-25	0.83	12	0.85
	Widespreadness	USS Bother	-6	0.77	-35	0.75	10	0.76
		Widespread	-6	0.89	-35	0.89	12	0.85
	Baseline Tertile	Localized	-5	0.76	-30	0.76	10	0.83
		Low tertile	-1	0.6	-5	0.59	10	0.59
		Middle Tertile	-5	0.83	-35	0.84	10	0.85
		High Tertile	-9	0.95	-40	0.94	14	0.93
USS	Subgroup	Overall	-3	0.67	-20	0.69	10	0.68
	Sex	Male CP/CPPS Only	-3	0.67	-20	0.64	10	0.47
		Male with IC/BPS	1	0.32	10	0.28	13	0.58
		Female	-3	0.75	-25	0.79	9	0.76
	Hunner Lesions	Yes	-1	0.59	-9	0.59	11	0.69
		No	-3	0.73	-20	0.73	10	0.76
	PainDETECT Type	Likely Neuropathic	-3	0.8	-30	0.81	11	0.69
		Likely Non-neuropathic	-2	0.61	-15	0.64	9	0.67
	Most Bothersome Symptom Type	PPS Bother	-3	0.74	-25	0.79	8	0.76
		USS Bother	-2	0.63	-7	0.6	14	0.62
	Widespreadness	Widespread	-2	0.66	-15	0.69	10	0.72
		Localized	-3	0.67	-20	0.68	8	0.64
	Baseline Tertile	Low tertile	-2	0.68	-20	0.66	5	0.56
		Middle Tertile	-4	0.78	-25	0.78	9	0.8
High Tertile		-3	0.68	-15	0.68	16	0.71	

Appendix Table 5. ROC-based Thresholds for Brief Pain Inventory Item 6 and Genitourinary Pain Index Item 4 using ‘Markedly Improved’ as the Definition of Responder and Participants with GUPI-4 ≥ 4 at Baseline

			Absolute Change		Percent Change		Attained Level	
			CID	AUC	CID	AUC	CID	AUC
BPI-6	Subgroup	Overall	-2	0.7	-30	0.76	2	0.81
	Sex Diagnosis	Male CP/CPPS Only	-3	0.91	-55	0.93	1	0.96
		Male with IC/BPS	-1	0.61	-30	0.71	2	0.84
		Female	-2	0.68	-25	0.74	3	0.77
	Hunner Lesions	Yes	-2	0.8	-35	0.84	2	0.84
		No	-1	0.57	-20	0.63	3	0.71
	PainDETECT Type	Likely Neuropathic	-1	0.44	-5	0.49	4	0.6
		Likely Non-neuropathic	-2	0.76	-45	0.81	2	0.84
	Most Bothersome Symptom Type	PPS Bother	-2	0.76	-30	0.81	3	0.83
		USS Bother	-2	0.63	-40	0.68	2	0.74
	Widespreadness	Widespread	-2	0.7	-25	0.73	3	0.77
		Localized	-2	0.7	-45	0.8	2	0.86
	Baseline Tertile	Low tertile	-1	0.62	-5	0.7	2	0.73
		Middle Tertile	-2	0.8	-30	0.8	2	0.8
High Tertile		-3	0.75	-35	0.75	4	0.79	
GUPI-4	Subgroup	Overall	-3	0.83	-30	0.79	3	0.85
	Sex	Male CP/CPPS Only	-3	0.87	-30	0.84	2	0.89
		Male with IC/BPS	-3	0.74	-30	0.75	3	0.81
		Female	-3	0.83	-30	0.79	3	0.85
	Hunner Lesions	Yes	-3	0.88	-30	0.87	3	0.92
		No	-3	0.89	-25	0.81	3	0.87
	PainDETECT Type	Likely Neuropathic	-3	0.83	-25	0.81	3	0.84
		Likely Non-neuropathic	-3	0.81	-30	0.77	3	0.82
	Most Bothersome Symptom Type	PPS Bother	-3	0.8	-25	0.77	3	0.84
		USS Bother	-3	0.79	-30	0.78	3	0.82
	Widespreadness	Widespread	-3	0.87	-25	0.83	3	0.86
		Localized	-3	0.78	-30	0.74	3	0.83
	Baseline Tertile	Low tertile	-2	0.73	-30	0.76	2	0.73
		Middle Tertile	-3	0.89	-25	0.8	2	0.89
High Tertile		-4	0.93	-35	0.83	3	0.93	

Appendix Figure 1. Estimates of Absolute (left) and Percent (right) Clinically Important Difference for BPI Item 6(top) and GUPI Item 4(bottom). Marker size is proportional to sample size; whiskers represent pointwise 95% confidence intervals.

