

**Supplementary Table 1.** Subgroup analysis stratified by postoperative acetaminophen/ibuprofen combination use

	Before postoperative combination use (n = 55)			After postoperative combination use (n = 97)		
	Preemptive group (n = 28)	Preventive group (n = 27)	P value	Preemptive group (n = 48)	Preventive group (n = 49)	P value
<b>PCA fentanyl consumption</b>						
2 hours	80 [40, 130]	80 [60, 100]	0.727	80 [60, 120]	100 [60, 100]	0.772
6 hours	140 [70, 290]	140 [80, 220]	0.913	160 [100, 240]	140 [100, 240]	0.945
24 hours	260 [120, 510]	320 [130, 570]	0.762	260 [160, 440]	320 [140, 520]	0.425
48 hours	380 [140, 750]	520 [250, 910]	0.262	440 [200, 600]	540 [240, 880]	0.134
<b>NRS pain score</b>						
2 hours (at rest)	5 [4, 5]	5 [5, 5]	> 0.999	5 [4, 5]	5 [5, 5]	0.083
6 hours (at rest)	4 [4, 5]	4 [3, 5]	0.109	4 [4, 5]	5 [4, 5]	0.763
24 hours (at rest)	3 [2, 3]	3 [2, 3]	0.771	2 [1, 3]	2 [1, 3]	> 0.999
24 hours (cough)	5 [4, 6]	4 [4, 5]	0.026	5 [4, 7]	5 [4, 7]	0.624
48 hours (at rest)	2 [1, 2.5]	3 [2, 3]	0.029	1 [0, 2]	1 [0, 2]	0.232
48 hours (cough)	3 [3, 4]	3 [3, 4.5]	0.697	4 [3, 5]	4 [3, 5]	0.899
<b>PACU medication</b>						
Fentanyl	2 (7.1)	3 (11.1)	0.966	11 (22.9)	16 (32.7)	0.399
Antiemetics	0 (0.0)	0 (0.0)	> 0.999	1 (2.1)	0 (0.0)	0.992
<b>Rescue analgesics at ward</b>						
2 hours	1 (3.6)	0 (0.0)	> 0.999	0 (0.0)	2 (4.1)	0.484
2-6 hours	0 (0.0)	1 (3.7)	0.985	0 (0.0)	2 (4.1)	0.484
6-24 hours	0 (0.0)	2 (7.4)	0.455	3 (6.3)	2 (4.1)	0.981
24-48 hours	0 (0.0)	1 (3.7)	0.985	3 (6.3)	1 (2.0)	0.595
<b>PCA adverse effect</b>						
Nausea (0-24 hours)	7 (25.0)	2 (7.4)	0.162	4 (8.3)	3 (6.1)	0.977
Dizziness (0-24 hours)	3 (10.7)	5 (18.5)	0.661	4 (8.3)	3 (6.1)	0.977
Nausea (24-48 hours)	0 (0.0)	2 (7.4)	0.455	3 (6.3)	1 (2.0)	0.595
Dizziness (24-48 hours)	0 (0.0)	2 (7.4)	0.455	3 (6.3)	1 (2.0)	0.595
QoR-15K at 24 hours	111.5 [102.5, 126.0]	119.0 [99.5, 126.0]	0.619	110.0 [96.5, 128.5]	116.0 [105.0, 131.0]	0.241
<b>Lab tests at POD 1</b>						
AST (IU/L)	21.0 [17.0, 22.0]	22.0 [18.5, 25.0]	0.244	21.0 [18.5, 24.0]	20.0 [18.0, 22.0]	0.326
ALT (IU/L)	14.5 [12.0, 22.5]	18.0 [15.0, 23.5]	0.060	17.0 [14.0, 24.5]	18.0 [14.0, 25.0]	0.983
Creatinine (mg/dL)	0.8 [0.8, 0.9]	0.8 [0.8, 0.9]	0.555	0.9 [0.8, 1.0]	0.8 [0.8, 0.9]	0.860

Values are presented as median [interquartile range] or number (%).

PCA: patient-controlled analgesia, NRS: numeric rating scale, PACU: post-anesthesia care unit, QoR-15K: Korean version of the Quality of Recovery-15 questionnaire, POD: postoperative day, AST: aspartate aminotransferase, ALT: alanine aminotransferase.

**Supplementary Table 2.** Nonparametric repeated-measures analysis

Endpoint	Effect	df	ATS	P value
PCA bolus attempt count	Group	1.00	0.00	0.982
	Time	1.57	200.07	< 0.001
	Group × Time	1.57	1.44	0.238
NRS pain scores at rest	Group	1.00	1.67	0.197
	Time	2.49	308.10	< 0.001
	Group × Time	2.49	1.52	0.213
NRS pain scores during cough	Group	1.00	0.02	0.902
	Time	1.00	132.53	< 0.001
	Group × Time	1.00	1.79	0.181
Rescue analgesics at ward	Group	1.00	0.66	0.415
	Time	2.93	0.95	0.412
	Group × Time	2.93	0.69	0.552
PCA adverse effects (nausea)	Group	1.00	1.45	0.229
	Time	1.00	6.53	0.011
	Group × Time	1.00	2.35	0.125
PCA adverse effects (vomiting)	Group	1.00	0.04	0.833
	Time	1.00	4.86	0.028
	Group × Time	1.00	0.06	0.807

df: degree of freedom, ATS: ANOVA-type statistics, PCA: patient-controlled analgesia, NRS: numeric rating scale.