

Effect of esketamine combined with lidocaine on opioid requirements in the elderly undergoing laparoscopic colorectal cancer surgery: a randomized, double-blind, controlled trial

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Supplementary Material

Supplementary Material Table 1. Intraoperation Hemodynamic Parameters

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This supplemental material has been provided by the authors to give readers additional information about their work.

Supplementary Material Table 1. Intraoperation Hemodynamic Parameters

	Group C, n = 50	Group S, n = 50	Group SL, n = 51	P value
HR, beats/min				
t0	64.00 (53.00,75.25)	57.50 (53.00,68.00)	58.00 (51.00,66.00)	0.068
t1	60.00 (53.00,65.25)	64.50 (57.00,74.00)* [□]	58.00 (51.00,65.00) [#]	0.004
t2	66.60 (59.50,66.50)	70.25 (63.00,74.80)	58.00 (52.00,70.80)	0.082
t3	60.50 (51.00,68.00) [□]	58.00 (51.00,64.00)	56.00 (52.00,63.00)	0.385
t4	69.56 $\pm$ 9.69	68.56 $\pm$ 11.21 [□]	69.31 $\pm$ 13.19 [□]	0.902
P value	<0.001	<0.001	<0.001	
MAP, mmHg				
t0	87.50 (81.50,94.00)	85.00 (77.00,94.25)	89.00 (78.00,99.00)	0.756
t1	94.20 $\pm$ 11.57 [□]	100.06 $\pm$ 10.60* [□]	97.98 $\pm$ 9.19 [□]	0.020
t2	95.76 $\pm$ 11.25 [□]	99.46 $\pm$ 8.24 [□]	95.16 $\pm$ 6.63 ^{#□}	0.035
t3	88.84 $\pm$ 12.62	94.58 $\pm$ 8.73* [□]	92.35 $\pm$ 9.87	0.025
t4	99.90 $\pm$ 14.65 [□]	100.20 $\pm$ 10.27 [□]	99.90 $\pm$ 12.19 [□]	0.990
P value	<0.001	<0.001	<0.001	

The data are means $\pm$ SD, median (interquartile range), or number of patients (%). The data reported as mean $\pm$ SD were compared with the analysis of variance (ANOVA), the data reported as median (interquartile range) were compared using the Kruskal - Wallis test, and the data reported as the number of patients (%) were compared using the Pearson chi-square test.

Abbreviations: t0: the completion of invasive arteries; t1: the establishment of pneumoperitoneum; t2: the opening of the abdomen; t3: the end of the operation; t4: the time of awakening; HR: Heart Rate; MAP: Mean Arterial Pressure. Compare with group C, * $P < 0.05$; compare with group S, [#] $P < 0.05$; compare with t0, [□] $P < 0.05$.

Supplementary Material Table 2. Postoperative sufentanil Consumption (MME)

	Group C, n = 50	Group S, n = 50	Group SL, n = 51	P value	95% CI
					S vs C: -0.90 (-1.65 to -0.15)
T0 (MME)	4.20 (2.90,5.05)	3.30 (1.50,4.25)*	3.20 (1.50,4.25)*	<0.001	SL vs C: -1.00 (-1.75 to -0.25) SL vs S: -0.10 (-0.85 to 0.65)
					S vs C: -2.65 (-4.80 to -0.50)
T1 (MME)	4.15 (1.30,6.50)	1.50 (1.20,6.10)*	1.50 (1.10,1.80)*	0.026	SL vs C: -2.65 (-4.80 to -0.50) SL vs S: 0.00 (-2.15 to 2.15)
					S vs C: -2.93 (-5.50 to -0.36)
T2 (MME)	103.22 (98.30,108.25)	100.29 (99.60,104.43)*	95.13 (95.20,100.40)*#	<0.001	SL vs C: -8.09 (-10.66 to -5.52) SL vs S: -5.16 (-7.73 to -2.59)
					S vs C: 2.24 (-0.33 to 4.81)
T3 (MME)	90.36 (85.50,95.60)	92.60 (89.65,96.20)	94.21 (93.00,98.20)*#	<0.001	SL vs C: 3.85 (1.28 to 6.42) SL vs S: 1.61 (-0.96 to 4.18)
					S vs C: -0.20 (-3.77 to 3.37)
Total (MME)	200.00 (200.00,205.00)	199.80 (196.15,200.00)*	196.60 (191.20,200.00)*#	<0.001	SL vs C: -3.40 (-6.97 to 0.17) SL vs S: -3.20 (-6.77 to 0.37)

The data are reported as median (interquartile range) and were compared between groups using the Kruskal - Wallis test.

Abbreviations: MME: Morphine Milligram Equivalents), using a conversion factor of 1 µg sufentanil = 1 mg oral morphine equivalent. T0: extubation to the time of admission to the PACU, T1: during the PACU, T2: the first postoperative day, T3: the second postoperative day, Total: the total consumption of sufentanil

Compare with group C, * $P<0.05$; compare with group S, # $P<0.05$.

Supplementary Material Table 3. Postoperative NRS scores, Ramsay scores

	Group C, n=50	Group S, n = 50	Group SL, n = 51	<i>P</i> value
NRS(rest)				
T0	3.00 (1.00,4.00)	2.00 (1.75,3.00)	1.00 (0.00,2.00)*#	<0.001
T1	3.50 (2.00,4.25)	3.00 (2.00,3.25)	2.00 (0.00,3.00)*#	<0.001
T2 - A.M.	4.00 (2.00,5.00)	3.00 (2.00,4.00)*	3.00 (2.00,4.00)*	<0.001
T2 - P.M.	3.00 (3.00,4.00)	3.00 (3.00,3.00)	2.00 (2.00,3.00)*#	<0.001
T3 - A.M.	3.00 (2.00,4.25)	2.00 (2.00,3.00)*	2.00 (1.00,3.00)*#	<0.001
T3 - P.M.	2.00 (2.00,3.00)	2.00 (1.00,3.00)	1.00 (1.00,2.00)*#	<0.001
NRS(coughing)				
T0	4.00 (3.00,6.00)	3.50 (2.00,5.00)	3.00 (1.00,4.00)*#	<0.001
T1	5.50 (3.00,6.00)	5.00 (3.00,5.00)*	4.00 (2.00,5.00)*#	<0.001
T2 - A.M.	6.00 (5.00,6.00)	5.00 (4.00,6.00)*	4.00 (3.00,5.00)*#	<0.001
T2 - P.M.	5.00 (4.00,5.25)	4.00 (4.00,5.00)*	4.00 (3.00,4.00)*#	<0.001
T3 - A.M.	4.00 (3.00,5.00)	4.00 (3.00,4.00)	3.00 (2.00,4.00)*#	<0.001
T3 - P.M.	3.50 (3.00,4.00)	3.00 (2.00,4.00)	2.00 (2.00,3.00)*#	<0.001
NRS(movement)				
T0	7.00 (6.00,8.00)	7.00 (6.00,8.00)	6.00 (5.00,8.00)	0.330
T1	7.00 (6.75,8.00)	7.00 (6.75,8.00)	7.00 (6.00,8.00)	0.963
T2 - A.M.	7.00 (6.00,8.00)	6.00 (5.00,7.00)*	5.00 (4.00,6.00)*#	<0.001
T2 - P.M.	6.00 (6.00,7.00)	6.00 (5.00,6.00)*	5.00 (4.00,6.00)*#	<0.001
T3 - A.M.	6.00 (5.00,6.00)	5.00 (4.00,5.00)*	4.00 (4.00,5.00)*#	<0.001
T3 - P.M.	5.00 (4.00,5.00)	4.00 (3.00,5.00)*	3.00 (3.00,4.00)*#	<0.001
Ramsay				
T0	2.00 (2.00,2.00)	2.00 (2.00,2.00)	2.00 (2.00,2.00)	0.936
T1	2.00 (2.00,2.00)	2.00 (2.00,2.00)	2.00 (2.00,2.00)	0.620
T2 - A.M.	2.00 (2.00,2.00)	2.00 (2.00,2.00)	2.00 (2.00,2.00)	0.607
T2 - P.M.	2.00 (2.00,2.00)	2.00 (2.00,2.00)	2.00 (2.00,2.00)	0.375
T3 - A.M.	2.00 (2.00,2.00)	2.00 (2.00,2.00)	2.00 (2.00,2.00)	1.000
T3 - P.M.	2.00 (2.00,2.00)	2.00 (2.00,2.00)	2.00 (2.00,2.00)	1.000

The data are reported as median (interquartile range) and were compared between groups using the Kruskal - Wallis test. No within-group (i.e., across time) comparisons have been made.

Abbreviations: NRS: Numerical Rating Scale, level of NRS scores on a 0 to 10 scale, 0 = no pain, 1-3 = mild pain, 4-6 = moderate pain, 7-10 = severe pain; Ramsay: level of ramsay scores on a 0 to 6 scale, 1 = under-sedation, 2-4 = appropriately sedated, 5-6 = over-sedated. T0: remove the tracheal tube; T1: enter the recovery room; T2: postoperative day 1; T3: postoperative day 2; A.M.: 9-10 a.m.; P.M.: 16-17 p.m..

Compare with group C, * $P < 0.05$; compare with group S, # $P < 0.05$.

Supplementary Material Table 4. Proportion of Patients with Clinically Significant Pain (NRS ≥ 4)

	Group C, n=50	Group S, n = 50	Group SL, n = 51	P value
NRS(rest)				
T0	16(32%)	11(22%)	2(4%)*#	0.002
T1	25(50%)	11(22%)*	9(18%)*	0.002
T2 - A.M.	29(58%)	14(28%)*	13(25%)*	0.002
T2 - P.M.	13(26%)	5(10%)*	6(12%)	0.039
T3 - A.M.	21(42%)	5(10%)*	3(6%)*	<0.001
T3 - P.M.	3(6%)	4(8%)	2(4%)	0.765
NRS(coughing)				
T0	33(66%)	25(50%)	16(31%)*	0.002
T1	37(74%)	32(64%)	29(58%)	0.241
T2 - A.M.	50(100%)	42(84%)*	37(73%)*	<0.001
T2 - P.M.	39(78%)	41(82%)	29(58%)*#	0.017
T3 - A.M.	25(50%)	19(38%)	9(18%)*#	0.003
T3 - P.M.	26(52%)	23(46%)	9(18%)*#	0.001
NRS(movement)				
T0	50(100%)	50(100%)	50(100%)	
T1	50(100%)	50(100%)	50(100%)	
T2 - A.M.	50(100%)	50(100%)	50(100%)	
T2 - P.M.	50(100%)	50(100%)	50(100%)	
T3 - A.M.	49(98%)	49(98%)	39(76%)*#	<0.001
T3 - P.M.	44(88%)	32(64%)*	18(35%)*#	<0.001

The data are reported as number of patients (%) and were compared between groups using the Chi-square test or Fisher's exact test with post-hoc pairwise comparisons.

Abbreviations: NRS: Numerical Rating Scale, level of NRS scores on a 0 to 10 scale, 0 = no pain, 1-3 = mild pain, 4-6 = moderate pain, 7-10 = severe pain; Ramsay: level of ramsay scores on a 0 to 6 scale, 1 = under-sedation, 2-4 = appropriately sedated, 5-6 = over-sedated. T0: remove the tracheal tube; T1: enter the recovery room; T2: postoperative day 1; T3: postoperative day 2; A.M.: 9-10 a.m.; P.M.: 16-17 p.m..

Compare with group C, *P<0.05; compare with group S, #P<0.05.