STATISTICAL EVALUATION

Statistical Package for Social Sciences (SPSS) for Windows 15.0 program was used for statistical analysis. Oneway Anova and Kruskal Wallis tests were used for intergroup comparisons, Wilcoxon Signed Ranks tests were used within a group, General Linear Model (analysis of variance in repeated measures) friedman test was used for differences between times. The results were evaluated at 95% confidence interval and significance was evaluated at $p<0.05$ level.

FINDINGS

In our study, 60 male patients scheduled for TUR-P operation between 01.02.2010 and 01.08.2010 were randomly divided into three equal groups. In our study, no statistically significant difference was observed between the groups in terms of age, weight and height ($p>0.05$)

Comparison of demographic characteristics by groups (Mean± SD)

	Group	N	Mean± Std. Deviation	95% confidence interval	P value
age	N	20	65,45±8,56	(61,45-69,45)	
	C	20	61,05±9,71	(56,50-65,60)	
	NC	20	64,20±7,01	(60,92-67,48)	0,249*
	Total	60	63,57±8,56	(61,36-65,78)	
boy	N	20	170,85±6,19	(167,95-173,75)	
	C	20	171,60±4,71	(169,40-173,80)	
	NC	20	170,55±5,42	(168,01-173,09	0,823*
	Total	60	171,00±5,39	(169,61-172,39)	
weight	N	20	75,70±8,16	(71,88-79,52)	
	C	20	77,70±8,75	(73,60-81,80)	
	NC	20	73,45±8,33	(69,55-77,35)	0,287*
	Total	60	75,62±8,46	(73,43-77,80)	

Anova test p>0.05 no difference

There was no difference between the groups in terms of ASA.

Comparison of ASA according to groups (Mean± SD)

			Group		
			N	C	NC
ASA	1	Number(%)	10(%43,5)	7(%30,4)	6(%26,1)
	2	Number(%)	9(%29)	10(%32,3)	12(%38,7)
	3	Number(%)	1(%16,7)	3(%50)	2(%33,3)

There was no normal distribution between the groups in terms of preoperative characteristics. It can be seen in the table... that patients with no systemic disease were the majority among all patients. HT is a common systemic disease in our patients.

Numerical distribution of preoperative characteristics of patients in the groups.

PREOP FEATURES	NUMBER(%)
NO	23/60
DM	7/60
HT	27/60
COPD	6/60
GUATR	3/60
KAH	6/60
SVO	1/60

When the pulse rate values before sedation and the pulse rate values at the 5th minute after sedation were compared by repeated measures analysis of variance, it was observed that there was a difference between times ($p < 0.05$), but there was no statistically significant difference between groups ($p > 0.05$).

Comparison of the pulse rate values of the groups before sedation with the pulse rate values after sedation (MEAN.± SD)

	Group	Mean± Std. Deviation	P VALUE TIME	P VALUE GROUP*TIME
Pulse s.o.d.1min	N	76,55±10,62		
	C	81,85±11,73		
	NC	81,70±14,03		
	Total	80,03±12,26	<0,001	0,534
Pulse s.s.s.5min	N	75,00±11,55		
	C	78,80±11,25		
	NC	79,15±12,98		
	Total	77,65±11,90		
GROUP P VALUE		0,375		

Analysis of variance in repeated measures

When the systolic pressure values before sedation were compared with the systolic pressure values after sedation, it was observed that there was no difference between groups ($p > 0.05$), but there was a difference between times ($p < 0.05$).

Comparison of systolic pressure values of the groups before sedation and systolic pressure values after sedation (MEAN.± SD)

Group		Systolic s.e.1min	Systolic s.s.s.5min	P value time
N	Mean± Std. Deviation	139,50±13,39	126,70±13,77	P<0,001
	Median(min-max)	140(114-177)	127(100-163)	
C	Mean± Std. Deviation	136,35±10,13	123,80±8,61	P<0,001
	Median(min-max)	137,50(120-160)	125(110-139)	
NC	Mean± Std. Deviation	138,40±11,55	126,70±13,76	P<0,001
	Median(min-max)	140(112-168)	128,5(95-158)	
P value		0,619	0,572	

Comparison between groups kruskal wallis test
Comparison between time wilcoxon test

When the pre-sedation diastolic pressure values were compared with the post-sedation diastolic pressure values, it was observed that there was no statistically significant difference between times and between groups (p>0.05).

Comparison of diastolic pressure values of the groups before sedation and systolic pressure values after sedation (MEAN.± SD)

Group		Diastolic s.o.d.1min	Diastolic s.s.s.5min	P value
N	Mean± Std. Deviation	81,35±8,31	74,35±9,02	0,005
	Median(min-max)	81(60-90)	71,5(62-92)	
C	Mean± Std. Deviation	80,20±6,76	77,85±6,92	0,070
	Median(min-max)	80(70-90)	76(67-92)	
NC	Mean± Std. Deviation	82,60±6,91	78,80±7,67	0,083
	Median(min-max)	80(75-95)	80,5(65-90)	
P value		0,472	0,170	

Comparison between groups kruskal wallis test
Comparison between time wilcoxon test

Diastolic s.ö.1min - s.s.5min.	N	Mean± Std. Deviation
N	20	-8,14±10,81
C	20	-2,66±8,12
NC	20	-4,14±10,98
P value		0,213

Comparison between groups anova test

When O2 saturation values before sedation (p.s.) and after sedation (p.s.) were compared, there was no statistically significant difference between times and groups (p>0.05).

Comparison of SpO2 before sedation and SpO2 after sedation of the groups (MEAN.± SD)

Group		SpO2 s.ö.1min	SpO2 s.s.s.5min	P value
N	Mean± Std. Deviation	95,40±1,09	95,40±1,53	1,000
	Median(min-max)	95(92-97)	95(91-98)	
C	Mean± Std. Deviation	96,25±1,52	96,20±1,47	0,914
	Median(min-max)	96(95-100)	96(95-100)	
NC	Mean± Std. Deviation	95,75±1,25	95,75±1,12	1,000
	Median(min-max)	95(95-99)	95(95-99)	
P value		0,306	0,369	

Comparison between groups kruskal wallis test
Comparison between time wilcoxon test

When the time between the time of epidural block and the start of the operation was compared, a statistically significant difference was observed between the groups (p<0.05). It was observed that the time was shorter in the catheter and semi-needle semi-catheter groups.

Time between the time of epidural administration and the start of the operation (ORT.± SD)

Group	Mean± Std. Deviation	Median(min-max)
N	15,25±1,97	15(10-20)
C	10,50±1,54	10(10-15)
NC	11,25±2,22	10(10-15)
P value		P<0,001

Intergroup comparison kruskal wallis test

Since the hemodynamic parameters after epidural block did not change significantly after the patient reached the maximum sensory block level (20th minute), the values up to the 20th minute were compared in all groups.

When the pulse values at the 5th minute after sedation (s.s.) and the first 20 minutes (time of maximum sensory block) were compared by repeated measures analysis of variance, it was observed that there was a difference between times (p<0.05) but not between groups (p>0.05).

Comparison of pulse rate values of the groups after sedation and pulse rate values after epidural block (MEAN.± SD)

	GROUP	Mean± Std. Deviation
Pulse s. s.5min	N	75,00±11,55
	C	78,80±11,25
	NC	79,15±12,98
Pulse 5.min	N	74,20±12,28
	C	78,65±12,40
	NC	78,15±14,63
Pulse 10 min	N	74,95±13,19
	C	77,15±11,88
	NC	79,10±14,35
Pulse 15 min	N	71,40±12,08
	C	75,65±9,51
	NC	76,90±14,88
Pulse 20 min	N	70,60±11,50
	C	73,65±9,88
	NC	74,50±13,95
P value time		P<0,001
P value group*time		0,556
P value group		0,487

When the pulse values at the 5th minute after sedation (s.s.) and the pulse values up to the 20th minute after epidural block are compared, it is seen that there is a statistically significant difference (p<0.05) from the 10th minute (with the increase in the level of sensory block).

Pulse	After epidural block	P value
	Minute 5.	1,000
s.s. 5 min.	10th minute.	1,000
	15th minute.	,003
	20th minute.	,000

 In terms of systolic pressures, when the values from the 5th minute after sedation (s.s.) to the 20th minute after epidural block were compared, it was observed that there was a statistically significant difference between the times in the needle group (p<0.05), while there was no difference between the times in the catheter and semi-needle semi-catheter groups (p>0.05), and there was no difference between the groups (p>0.05).

Comparison of systolic pressure values of the groups after sedation and systolic pressure values after epidural block (MEAN.± SD)

GROUP		Systolic s.s.s.5min	Systolic 5.min	Systolic 10 min	Systolic 15 min	Systolic 20 min	P VALUE TIME
N	Mean± Std. Deviation	126,70±13,80	122,45±18,09	122,35±18,54	116,70±14,95	116,80±16,04	<0,001
	Median(min-max)	127(100-163)	118(99-181)	119(97-180)	115(95-160)	116,5(90-167)	
C	Mean± Std. Deviation	123,80±8,61	120,30±9,42	120,10±10,58	119,45±12,35	116,40±11,90	0,007
	Median(min-max)	125(115,3-130,5)	119,5(113,3-126,5)	120,5(113,3-127,5)	119(113,5-124,8)	117(113,5-120,8)	
NC	Mean± Std. Deviation	126,7±13,8	121,1±11,7	121,2±11,3	121,6±14,3	121,1±13,5	0,081
	Median(min-max)	128,5(114,3-135)	125,5(110,3-131,5)	122(116,3-130)	121(115-131,5)	119,5(115-130,3)	
P VALUE GROUP		0,572	0,950	0,908	0,315	0,321	

Comparison between groups kruskal wallis test
Comparison between time friedman test

When diastolic pressure values were compared, it was observed that there was no difference between the groups (p>0.05) and there was a statistically significant difference between the times (p<0.05).

Comparison of diastolic pressure values of the groups after sedation and diastolic pressure values after epidural block (MEAN.± SD)

GRUP		Diastolic s.s.s.5min	Diastolic 5.min	Diastolic 10.min	Diastolic 15.min	Diastolic 20.min	P VALUE TIME
N	Mean± Std. Deviation	74,35±9,02	74,05±8,39	73,05±9,09	71,00±9,59	71,00±8,69	
	Median(min-max)	74(70-77)	74(70-77)	73(69-76)	71(66-75)	71(67-74)	
C	Mean± Std. Deviation	77,85±6,92	72,20±8,79	71,45±8,54	70,70±7,75	69,85±8,17	P<0,05
	Median(min-max)	77(74-81)	72(68-76)	71(68-75)	71(67-75)	70(66-74)	
NC	Mean± Std. Deviation	78,80±7,68	78,20±8,22	76,70±7,84	75,85±9,50	74,50±8,66	
	Median(min-max)	79(75-82)	78(74-82)	77(73-81)	76(72-80)	75(71-78)	
P VALUE GROUP		0,437	0,831	0,420	0,736	0,831	

When O2 saturation values after sedation (s.s.) were compared with O2 saturation values up to the 20th minute after epidural block, it was observed that there was no statistically significant difference between the groups (p>0.05), but there was a difference between times (p<0.05).

Comparison of SpO2 values of the groups after sedation and SpO2 values after epidural block (mean ± SD)

GROUP		SpO2 s.s.s.5min	SpO2 5.min	SpO2 10 min	SpO2 15 min	SpO2 20 min	P VALUE TIME
N	Mean± Std. Deviation	95,40±1,54	96,00±1,12	96,65±1,27	97,10±1,59	97,65±1,50	0,000
	Median(min-max)	95,00(91-98)	96,00(95-99)	97,00(94-99)	97,50(94-100)	98,00(95-100)	
C	Mean± Std. Deviation	96,20±1,47	96,40±1,60	96,60±1,39	97,15±1,50	97,50±1,73	0,001
	Median(min-max)	96,00(95-100)	96,00(95-100)	96,50(95-99)	97,50(95-100)	97,50(94-100)	
NC	Mean± Std. Deviation	95,75±1,12	95,60±0,68	96,05±1,00	96,35±1,14	97,30±1,50	0,000
	Median(min-max)	95,00(95-99)	95,50(95-97)	96,00(95-98)	96,00(95-98)	97,50(95-100)	
P VALUE GROUP		0,369	0,340	0,246	0,151	0,744	

Comparison between groups kruskal wallis test
Comparison between time friedman test

Dermatomal distribution of sensory block levels of the groups

AFTER EPIDURAL BLOCK	GROUP N (N:20)	GROUP C (N:20)	GROUP NC (N:20)
5. min	L1	L1	L1
10. min	T12	T10	T10
15. min	T10	T8	T8
20. min	T10	T8	T8
25. min	T10	T8	T6
30. min	T10	T8	T6
35. min	T10	T8	T6
40. min	T10	T8	T6
45. min	T10	T8	T6
50. min	T10	T8	T6
55. dk	T10	T8	T6
60. min	T12	T8	T8

 Since the duration of surgery was not equal in all cases (45 min. to 75 min.), the mean values up to the 60th minute were evaluated.There was a statistically significant difference between the groups and times in terms of the level of sensory block, especially after the 5th and 10th minutes (p<0.005).In the first group, the level of sensory block sufficient for surgery was reached at 15. In the first group, the level of sensory block sufficient for surgery was reached at the 15th minute, while in the second and third groups it was reached at the 10th minute.The maximum level of sensory block in the first group was up to the T10 dermatome, but in the second group it was reached at the T8 dermatome at the 15th minute and in the third group at the T6 dermatome at the 25th minute.The dermatomes were numbered as in the table below to facilitate statistical analysis.

Numbering of dermatomes.

DERMATOMS	NUMBER
L1	**1**
T12	**2**
T10	**3**
T8	**4**
T6	**5**
T4	**6**

Comparison of the groups according to time in terms of sensory block levels after epidural block (MEAN.± SD)

GROUP		5.DK	10.DK	15 .DK	20TH DK	25. DK	30. DK	35TH DK	40. DK
N	Mean± Std. Deviation	1,05±0,22	2,20±0,41	3,10±0,45	3,20±0,52	3,20±0,52	3,20±0,52	3,20±0,52	3,20±0,52
	Median(min-max)	1(1-2)	2(2-3)	3(2-4)	3(2-4)	3(2-4)	3(2-4)	3(2-4)	3(2-4)
C	Mean± Std. Deviation	1,15±0,37	2,70±0,47	3,70±0,57	4,10±0,55	4,10±0,55	4,15±0,55	4,15±0,55	4,15±0,55
	Median(min-max)	1(1-2)	3(2-3)	4(3-5)	4(3-5)	4(3-5)	4(3-5)	4(3-5)	4(3-5)
N C	Mean± Std. Deviation	1,00±0,0	2,90±0,31	3,90±0,45	4,25±0,55	5,30±0,57	5,30±0,57	5,30±0,57	5,30±0,57
	Median(min-max)	1(1-1)	3(2-3)	4(3-5)	4(3-5)	5(4-6)	5(4-6)	5(4-6)	5(4-6)
	P VALUE GROUP	0,158	0,00	0,00	0,00	0,00	0,00	0,00	0,00

Comparison between groups kruskal wallis test
Comparison between time friedman test

In all groups, motor block was evaluated with the bromage scale.There was no statistically significant difference between the groups in terms of the development of motor block ($p>0.05$).4 patients in the first group had motor block. In the first group, 4 patients had motor block and the maximum bromage scale was evaluated as 2. In the second group, it was seen in 5 patients and the maximum bromage scale was evaluated as 3 in 1 patient, and in the third group, it developed in 2 patients and the maximum bromage scale was evaluated as 2.

Bromage Scale:

0	No paralysis.
1	He can only move his knee and foot.
2	He can't bend his knee, he can only move his foot.
3	He can't move his toes and thumb. Total paralysis.

Comparison of the groups in terms of motor block after epidural block according to time (MEAN. ±SD)

GROUP		5TH DK	10.DK	15.DK	20.DK	25.DK	30.DK	35.DK	40.DK
N	Mean± Std. Deviation	0,00±0,00	0,15±0,37	0,30±0,66	0,30±0,66	0,30±0,66	0,32±0,67	0,30±0,66	0,30±0,66
	Median(min-max)	0,00(0-0)	0,00(0-1)	0,00(0-2)	0,00(0-2)	0,00(0-2)	0,00(0-2)	0,00(0-2)	0,00(0-2)
C	Mean± Std. Deviation	0,05±0,22	0,40±0,69	0,60±1,0	0,60±1,0	0,60±1,0	0,60±1,0	0,60±1,0	0,60±1,0
	Median(min-max)	0,00(0-1)	0,00(0-2)	0,00(0-3)	0,00(0-3)	0,00(0-3)	0,00(0-3)	0,00(0-3)	0,00(0-3)
N C	Mean± Std. Deviation	0,00±0,00	0,10±0,31	0,20±0,62	0,20±0,62	0,20±0,62	0,20±0,62	0,20±0,62	0,20±0,62
	Median(min-max)	0,00(0-0)	0,00(0-1)	0,00(0-2)	0,00(0-2)	0,00(0-2)	0,00(0-2)	0,00(0-2)	0,00(0-2)
	P VALUE GROUP	0,368	0,201	0,275	0,275	0,275	0,283	0,275	0,275

Intergroup comparison kruskal wallis test

There was a statistically significant difference (p<0.05) between the groups in terms of the two-segment regression time of the postoperative sensory block and the time of complete disappearance of the sensory block at the 10th, 20th, 50th, and 80th minutes.The first group was found to be different from the other two groups.The time of block regression and mobilization was earlier in the first group.

Comparison of postoperative sensory block levels of the groups (mean ± SD)

GROUP		10.DK	20.DK	30.DK	40.DK	50.DK	60.DK	70.DK	80.DK	90.DK	100.l
N	Mean± Std. Deviation	2,8±0,64	2,7±0,66	2,7±0,67	2,3±0,8	2,1±0,66	2,3±0,47	1,9±0,54	1,6±0,69	1,8±0,45	1,3±
	Median(min-max)	3(2-4)	3(2-4)	3(2-4)	2(1-4)	2(1-3)	2(2-3)	2(1-3)	1(1-3)	2(1-2)	1(
C	Mean± Std. Deviation	3,8±1,01	3,8±0,97	3,5±1,05	3,2±1,2	3,0±1,0	2,8±0,86	2,6±0,94	2,3±0,72	1,9±0,73	1,7±
	Median(min-max)	4(2-6)	4(2-6)	3,5(2-6)	3(1-6)	3(1-5)	3(1-5)	3(1-5)	2(1-4)	2(1-4)	2(
N C	Mean± Std. Deviation	3,6±0,68	3,5±0,61	3,3±0,64	2,8±0,79	2,6±0,50	2,5±0,61	2,2±0,65	1,9±0,44	1,9±0,54	1,4±
	Median(min-max)	4(2-5)	3,5(2-4)	3(2-4)	3(1-4)	3(2-3)	3(1-3)	2(1-3)	2(1-3)	2(1-3)	1(
P VALUE GROUP		**0,0003**	**0,0003**	0,0092	0,0356	**0,0038**	0,0615	0,027	**0,012**	0,981	0,

Intergroup comparison kruskal wallis test

10.MIN (P VALUES BETWEEN GROUPS)

DIFFERENCE N-C	0,000
DIFFERENCE N-NC	0,000
DIFFERENCE C-NC	0,272

20.MIN (P VALUES BETWEEN GROUPS)

DIFFERENCE N-C	0,000
DIFFERENCE N-NC	0,002
DIFFERENCE C-NC	0,357

50.MIN (P VALUES BETWEEN GROUPS)

DIFFERENCE N-C	0,001
DIFFERENCE N-NC	0,025
DIFFERENCE C-NC	0,287

There was no statistically significant difference between the groups in terms of postoperative motor block regression (p>0.05). Since motor block developed in very few patients, motor block disappeared after surgery in parallel with the regression of sensory block.

None of the patients experienced side effects (hypotension, bradycardia, nausea, vomiting, dizziness, headache and back pain requiring treatment).

None of the patients underwent intravenous catheterization or subarachnoid cannulation during catheter placement.

When compared in terms of patient and surgeon satisfaction, no statistically significant difference was observed between the groups (p>0.05).Patients complained of waiting too long in the recovery room because the block regression time was longer in the catheter and half-needle half-catheter group, but the fact that the postoperative analgesic effect lasted longer in the catheter and half-needle half-catheter group was evaluated as full points by patients and surgeons.

0	He's not happy.
1	Undecided
2	Very Satisfied

Comparison of the groups in terms of patient and surgeon satisfaction   (MEAN. ±SD)

GROUP		Patient satisfaction	Surgeon satisfaction
N	Mean± Std. Deviation	2,00±0,00	1,95±0,224
	Median(min-max)	2(2-2)	2(1-2)
C	Mean± Std. Deviation	2,00±0,00	2,00±0,00
	Median(min-max)	2(2-2)	2(2-2)
NC	Mean± Std. Deviation	2,00±0,00	2,00±0,00
	Median(min-max)	2(2-2)	2(2-2)