This study was conducted on 40 patients between 20- 60 years old undergoing

 elective thoracotomy. Patients were divided into two equal groups:

**Group I Serratus anterior plane block (SAPB)**: received ultrasound guided serratus anterior plane block.

**Group II Thoracic epidural analgesia (TEA)**: received thoracic epidural catheter.

In both groups a bolus dose of 0.25% bupivacaine was given then continuous infusion of bupivacaine 0.125% .

**(table 6-1):** **Demographic characteristics and duration of surgery**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Group I | Group II | Test | *p*-value |
| Age (yrs.) | 42.6± 11.55 | 42.35± 12.19 | t=0.06 | 0.9 |
| Weight (kg.) | 75.2± 9.65 | 78.3± 11.2 | t=0.93 | 0.35 |
| Sex | M | 11(55%) | 13(65%) | X2=0. 41 | 0.52 |
| F | 9(45%) | 7(35%) |
| ASA | I | 5(25%) | 4(20%) | X2=0.46 | 0.79 |
| II | 12(60%) | 14(70%) |
| III | 3(15%) | 2(10%) |
| Duration of surgery (min.) | 93.5± 31.5 | 95.75± 30.6 | t=0.23 | 0.82 |

**Table (6-1): Demographic characteristics;**

 As regards age, weight, and ASA status, current study showed no significant statistical differences between both groups with P-value > 0.05. (Table 1)

**Table (6-1): Duration of surgery;**

Regarding duration of surgery, the mean in group 1 was 93.5± 31.5 and in group 2 is 95.75± 30.6 which was statistically non-significant (*p=0.82).* (Table 1)

**Table (6- 2): Visual analogue score at rest**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| VAS (At rest) | Group I | Group II | *U -* Test | *p*-value |
| Baseline | 3 [2-3] | 2 [2-3] | 157.5 | 0.127 |
| 6 hrs. | 2 [1.25-3] | 2 [1-2] | 155.5 | 0.117 |
| 12 hrs. | 2 [2-3] | 2 [1-2.75] | 145.5 | 0.072 |
| 18 hrs. | 2 [1-2.75] | 2 [1-2] | 156 | 0.238 |
| 24 hr. | 2 [1.25-3] | 1.5 [1-2] | 135.5 | 0.083 |

Regarding VAS (visual analogue score) at rest, current study showed no significant difference between group 1 and group 2 immediately and every six hours postoperative. But generally group 2 showed lower but not significant values in comparison with group 1. (Table2)(fig.1).

 **(Figure 6- 1):** Comparison between both groups as regards VAS during rest postoperative.

**Table (6- 3): Visual analogue score during deep breathe**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| VAS (during deep breathe) | Group I | Group II | *U -* Test | *p*-value |
| Baseline | 3 [3-4] | 3 [2.25-3.75] | 150 | 0.090 |
| 6 hrs. | 2 [2-3] | 2 [2-2] | 148 | 0.164 |
| 12 hrs. | 2 [2-3] | 2 [1-2.75] | 154.5 | 0.111 |
| 18 hrs. | 2 [1-2] | 2 [2-3] | 148 | 0.164 |
| 24 hr. | 3 [2-3] | 2 [2-3] | 162.5 | 0.158 |

Regarding VAS (visual analogue score) during deep breathe, current study showed no significant difference between group 1 and group 2 immediately and every six hours postoperative. (Table3) (fig.2)

 **(Figure 6- 2):** Comparison between both groups as regards VAS during deep breathe postoperative.

**Table (6- 4) : Visual analogue score during cough**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| VAS (during cough) | Group I | Group II | *U -* Test | *p*-value |
| Baseline | 2 [2-2] | 2 [1-2] | 133.5 | 0.073 |
| 6 hrs. | 2 [1-2] | 2 [1-2.75] | 169.5 | 0.417 |
| 12 hrs. | 3 [2-3] | 2 [2-3] | 137 | 0.051 |
| 18 hrs. | 2 [1.25-2.75] | 1 [1-2] | 155 | 0.115 |
| 24 hr. | 1 [1-2] | 1 [1-1] | 131.5 | 0.065 |

 Regarding VAS (visual analogue score) during cough , current study showed no significant difference between group 1 and group 2 immediately and every six hours postoperative. **(Table4)(fig.3)**

 **(Figure 6- 3):** Comparison between both groups as regards VAS during cough postoperative.

**Vital Data of the patients in both groups:**

**Blood pressure and heart rate** were measured at 0, 15min, 30min, 1hr. and every 2hrs for the first 24 hours postoperative.

 As regards comparing **mean arterial blood pressure (MAP)** between both groups (table 5) (fig.4), current study showed a significant lower MAP values in TEA group(group 2). *p*-value<0.001 which was statistically highly significant.

**Heart rate** did not show significant changes overtime in the group SAPB(group 1) or group TEA(group 2) . There was no significant difference between the two groups in the heart rate throughout the 24 hours **(table 6) (fig.5)**.

**Table (6- 5) : Mean arterial blood pressure (MAP) of both groups**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| MAP (mmHg) | Group I | Group II | t-value | *p*-value |
| Baseline | 78.25± 9.6 | 62.3± 5.43 | 8.09 | <0.001 |
| 15 min. | 71.25± 6.04 | 61.75± 4.37 | 5.69 | <0.001 |
| 30 min. | 68.75± 5.35 | 63.25± 4.37 | 3.56 | 0.001 |
| 1 hr. | 69.15± 6.49 | 62.75± 4.43 | 3.64 | <0.001 |
| 2 hrs. | 71± 5.52 | 61.8± 5.13 | 5.45 | <0.001 |
| 4 hrs. | 73± 4.11 | 62.8± 4.03 | 7.92 | <0.001 |
| 6 hrs. | 74.35± 4.65 | 60.75± 4.94 | 8.96 | <0.001 |
| 8 hrs. | 73.75± 4.83 | 57.55± 12.91 | 5.25 | <0.001 |
| 10 hrs. | 73.5± 3.66 | 63.75± 5.82 | 6.33 | <0.001 |
| 12 hrs. | 74.75± 5.49 | 59.8± 4.07 | 9.77 | <0.001 |
| 14 hrs. | 70.50± 6.86 | 61.05± 4.65 | 5.09 | <0.001 |
| 16 hrs. | 71.5± 5.87 | 61.95± 5.93 | 5.11 | <0.001 |
| 18 hrs. | 74.5± 7.05 | 59.5± 3.40 | 8.57 | <0.001 |
| 20 hrs. | 70.5± 6.86 | 59.2± 5.09 | 5.91 | <0.001 |
| 22 hrs. | 72.9± 5.62 | 59.7± 5.09 | 7.77 | <0.001 |
| 24 hrs. | 73± 4.93  | 60.35± 4.29 | 8.65 | <0.001 |

 **(Figure 6- 4):** Comparison between both groups as regard mean arterial blood pressure (MAP).

**Table ( 6-6) : Heart rate (HR) of both groups**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| HR (beat/min.) | Group I | Group II | t-value | *p*-value |
| Baseline | 74± 8.36 | 75.75± 6.54 | 0.73 | 0.46 |
| 15 min. | 83.25± 8.31 | 83.5± 6.51 | 0.10 | 0.91 |
| 30 min. | 72.75± 6.17 | 68.75± 5.1 | 2.23 | 0.03 |
| 1 hr. | 73± 6.76 | 70.25± 5.1 | 1.46 | 0.15 |
| 2 hrs. | 71.75± 7.12 | 70.55± 6.34 | 0.56 | 0.57 |
| 4 hrs. | 67.5± 3.80 | 72.5± 7.16 | 2.75 | 0.008 |
| 6 hrs. | 71.5± 6.90 | 76.5± 8.12 | 2.09 | 0.04 |
| 8 hrs. | 73.5± 9.47 | 72± 8.64 | 0.52 | 0.60 |
| 10 hrs. | 73.25± 7.82 | 73± 7.67 | 0.10 | 0.91 |
| 12 hrs. | 73± 6.95 | 74± 8.2 | 0.41 | 0.68 |
| 14 hrs. | 72.1± 6.09 | 69.3± 4.24 | 1.68 | 0.10 |
| 16 hrs. | 68.85± 4.48 | 69.75± 5.25 | 0.58 | 0.56 |
| 18 hrs. | 74± 5.77 | 72.5± 5.10 | 0.87 | 0.38 |
| 20 hrs. | 73.1± 4.75 | 73.3± 5.67 | 0.12 | 0.90 |
| 22 hrs. | 75.25± 5.65 | 74.75± 6.86 | 0.25 | 0.80 |
| 24 hrs. | 71.95± 6.55 | 71.95± 5.68 | 0.33 | 0.73 |

 **(Figure 6- 5):** Comparison between both groups as regard heart rate(HR).

**Table ( 6-7) : Analgesia consumption and Duration of hospital stay**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Group I | Group II | Test | *p*-value |
| analgesia consumption (mg) | 10.2± 1.71 | 9.27± 0.60 | 1.8 | 0.07 |
| Duration of hospital stays (Day) | 2.5± 0.9 | 2.35± 0.82 | 0.55 | 0.58 |

**Analgesia consumption;**

During the first 24 hours in the post-operative period, the analgesic consumption by morphine boluses used in each group when pain score exceeds 3, the difference was statistically non-significant ( *p>0.05).* (Table 7)(fig.6)

**Duration of hospital stay;**

As regarding duration of hospital stay after surgery the difference between the two groups was statistically non-significant ( *p>0.05).* (Table 7)(fig.7)

**(Figure 6- 6):** Comparison between both groups as regard total dose of morphine consumption during 24 hours.

 **(Figure 6- 7):** Comparison between both groups as regard duration of hospital stay.

**Table ( 6- 8): Postoperative complications**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Group I | Group II | Z-value | *p*-value |
| Nausea | 2(10%) | 1(5%) | 0.600 | 0.548 |
| Vomiting | 1(5%) | 1(5%) | 0.000 | 1.000 |

As regard patients having postoperative complications, current study showed lower incidence in both groups; Nausea 2 patients (10%) and vomiting 1 patient (5%) in group I as compared to nausea 1 patient (5%) and vomiting one patient (5%) in group II. These results are statistically non-significant with (P- value >0.05).(Table 8)