Pain is an extremely agonising experience for most women. Various methods have been tried since time immemorial to alleviate this pain. Attempts had been made even in ancient times to alleviate pain. The modern concept of obstetric analgesia can be said to have begun with James Young Simpson. He used ether in obstetric practice in 1847, barely months after its first public demonstration by Morton in 1846. or the birth of her child in 1853. Various methods like use of inhalational agents, parenteral drugs, psychological therapies came into effect but, could not last longer.

The use of lumbar epidural analgesia was made possible by the description of pain pathways by Aburel in 1930. Among all the techniques available, the epidural method comes closest to the ideal in being effective in alleviating pain and in being safe for both the mother and the fetus. The concentrations of local anesthetics initially used was high enough to cause motor blockade. Concerns about this motor blockade and its effect in delaying the progress of labor had to the use of low concentrations of local anesthetic which produce selective sensory blockade, thereby sparing the motor fibers. Levobupivacaine have been introduced into obstetric analgesic practice with the proposed advantages of causing less motor block and toxicity compared with bupivacaine. This study aims to compare onset, maximum level and duration of bupivacaine, and levobupivacaine at lower concentrations for analgesia.

METHOD

Our clinical study on "Epidural Analgesia for Child Birth" is to compare effectiveness of Bupivacaine and Levobupivacaine in relieving pain during labor. A total number of 60 parturients were studied. These patients were divided into two groups randomly.

RESULTS:

From our study: 1. The onset of analgesia with 0.125% levobupivacaine (6.53) which was similar to the onset time for the same concentration of bupivacaine (6.8 min) 2. 10 ml of 0.125% bupivacaine or 10 ml of 0.125% levobupivacaine produces a maximum level of sensory blockade up to T6 3. The duration of analgesia with 0.125% bupivacaine (80 min) is similar to the duration of analgesia 0.125% levobupivacaine (81 min).

CONCLUSION: Based on the data bupivacaine and levobupivacaine have produced equivalent onset, sensory block, and duration with good maternal and fetal outcome. The analgesic efficacy mainly depends on the concentration rather than the type of anesthetic drug. We conclude that both 0.125% bupivacaine and 0.125% levobupivacaine confer adequate and safe labor analgesia with no significant influence on the mode of delivery, hemodynamic changes, duration of labor or neonatal outcome.
sensory block T10 - S4 in relation to stretching of pelvic structure and perineum added to pain of uterine contractions.

Parameters observed:
1. Onset of Analgesia
2. Maximum level of Sensory Blockade
3. Duration of Analgesia

RESULTS
The demographic data with respect to age, gender and statistical data with respect to hemodynamics, side effects, motor blockade neonatal depression according to APGAR score were similar in both the groups.

Table I - Average duration of time for onset of analgesia (in minutes)

<table>
<thead>
<tr>
<th>Group</th>
<th>Min. Duration</th>
<th>Max. Duration</th>
<th>Average</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group I</td>
<td>2</td>
<td>13</td>
<td>6.86</td>
<td>2.88</td>
</tr>
<tr>
<td>Group II</td>
<td>2</td>
<td>4</td>
<td>6.5</td>
<td>3.20</td>
</tr>
</tbody>
</table>

Table I shows the average time of onset of analgesia. The minimum time for onset was two minutes in both groups. The maximum time for onset was 13 minutes in both groups. The mean time of onset of analgesia was calculated to be 6.8±2.88 minutes in group I and 6.5±3.2 minutes in group II. This difference in the mean time of onset of analgesia was found to be statistically insignificant (p=0.67) by t-test.

Table II - Maximum level of Sensory Blockade

<table>
<thead>
<tr>
<th>Max. level of Analgesia</th>
<th>Group –I</th>
<th>Group –II</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group –I</td>
<td>Group –II</td>
<td></td>
<td></td>
</tr>
<tr>
<td>T&lt;sub&gt;12&lt;/sub&gt;</td>
<td>12</td>
<td>13</td>
<td>43.3</td>
</tr>
<tr>
<td>T&lt;sub&gt;11&lt;/sub&gt;</td>
<td>7</td>
<td>8</td>
<td>26.7</td>
</tr>
<tr>
<td>T&lt;sub&gt;10&lt;/sub&gt;</td>
<td>11</td>
<td>9</td>
<td>30</td>
</tr>
<tr>
<td>T&lt;sub&gt;9&lt;/sub&gt;</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>T&lt;sub&gt;8&lt;/sub&gt;</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
<td>30</td>
<td>100</td>
</tr>
</tbody>
</table>

Table II shows the maximum level of analgesia reached in both the groups. The maximum level of analgesia reached was T8 in both groups. Majority of the parturients in both groups achieved a level of T8 i.e. 40% in group I and 43.3% in group II. This difference between the two groups was statistically significant (p>0.05) by t-test. The minimum level achieved was T10 by 36.7% of parturients in group I and 20% of parturients in group II. This difference was also statistically insignificant (0.05).

Table III - Average duration of analgesia (in minutes)

<table>
<thead>
<tr>
<th>Group</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Average</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group I</td>
<td>52</td>
<td>122</td>
<td>80.0</td>
<td>18.25</td>
</tr>
<tr>
<td>Group II</td>
<td>54</td>
<td>115</td>
<td>81.0</td>
<td>16.52</td>
</tr>
</tbody>
</table>

Table III shows the average duration of analgesia. The minimum duration of analgesia was 52 minutes in group I and 54 minutes in group II. The maximum duration was 122 minutes and 115 minutes in groups I and II respectively. The average duration was 80±18.25 minutes in group I and 81±16.52 minutes in group II. This difference between the two groups was statistically in significant (p=0.05) by t-test.

CONCLUSION
From our study, it can be concluded that:

The onset of analgesia with 0.125% levobupivacaine is (6.53 minutes) which was similar to the onset time for the same concentration of bupivacaine (6.8 minutes). 10ml of 0.125% bupivacaine or 10 ml of 0.125% levobupivacaine produces a maximum level of sensory block up to T8. The duration of analgesia with 0.125% bupivacaine (6.8 minutes) is similar to the duration of analgesia with 0.125% levobupivacaine which is (81 minutes).

Based on the data both bupivacaine and levobupivacaine confer adequate and safe labor analgesia with no significant influence on the mode of delivery, hemodynamic changes, duration of labor, or neonatal outcome.

DISCUSSION
The ideal labor analgesic technique should be effective, easy to administer, provide consistent, predictable and rapid in onset in all stages of labor, devoid of motor blockade, safe for the mother and the fetus and preserve the stimulus for expulsive efforts during the second stage of labor. It is now well recognized that the only consistently effective method of pain relief in labor is lumbar epidural analgesia. Previously, the local anesthetics bupivacaine, lidocaine and chlorprocaaine were used to provide epidural labor analgesia. Bupivacaine still remains the most often used local anesthetic in labor analgesia. Various workers have used varying concentrations of bupivacaine. However, it caused dense motor blockade and interference with maternal awareness of contractions. Despite providing excellent pain relief in labor, epidural analgesia using local anesthetics alone produces motor block in up to 85% of patients, reduces maternal satisfaction with analgesia and is associated with a prolonged second stage and an increased incidence of instrumental delivery. Workers using 0.125% bupivacaine have noticed;

a. Avoidance of significant motor blockade (Bleyaert).
b. Duration of second stage of labor was not prolonged (Bleyaert).
c. No difference in the mode of delivery (Bleyaert, Soetens).

However, severe central nervous system (CNS) and cardiovascular adverse reactions reported in the literature after inadvertent intravascular injection or intravenous regional anesthesia have been linked to the R (+) isomer of bupivacaine. The levorotatory isomers were shown to have a safer pharmacological profile with less cardiac and neurotoxic adverse effects. Mc leod et al., in 2001 stated that levotroto rotatory isomers were shown to have a safer pharmacological profile Casati et al, in 2006 concluded that levobupivacaine was associated with less cardiotoxic and neurotoxic effects. Most workers have commenced epidural analgesia when the cervical dilatation was 3 cm or more. In our study, the epidural analgesia was instituted with cervical dilatation between 4-6 cm.

Onset of analgesia
In our study, the mean onset of analgesia was taken as the time interval from time of epidural injection till the time when a sensory level of T12 was achieved. In our study, the mean onset of analgesia was 6.8 minutes (2-13 minutes) in group I. This is similar to the average onset time of 6 minutes noticed by Mc Morland et al. The average onset of analgesia time in group II in our study was 6.5 minutes (2-14 minutes). This concurs with the study of El Moutaz et al, who observed that the onset time was approximately 13 minutes.

Level of sensory block
In our study, the upper level of sensory block in most of the parturients was T8 in groups I and II. This finding was comparable to study done by Wang L.Z et al., in 2010 who concluded that using PCEA, same concentration of Bupivacaine, Ropivacaine and LevoBupivacaine with Sufentanil produce similar sensory blockade.

Duration of analgesia
The total duration of analgesia was defined as the time interval from the onset of analgesia till the return of painful contractions or till the regression of the sensory level below T10. In our study, the mean duration of analgesia in group I was 80 minutes (53-122 minutes). This is similar to the observations of Bleyaert et al. who found the mean duration of analgesia after the first dose to be 58±15 minutes. In group II, the average duration was 81 minutes (54-115 minutes).

REFERENCES
3. Robinson AP, Lyons GR, Wilson KC, Gorton HJ, Chumbol MD. Levobupivacaine for...


