A Comparative Study of Spinal Anaesthesia in Hypertensive and Non Hypertensive Patients

AWAIS ANWAR¹, SAMRA HAFEEZ²*, RAZIA RIZWAN³

ABSTRACT

The aim of the current study was to compare the spinal anaesthesia induced fall in blood pressure in normotensive and hypertensive patients. In the current study 86 individuals were selected from Jinnah hospital, Lahore. 56 were male and 30 were female ranging age from 21 to 70 years old. Means in systolic 119.31±38.21, 136±22.01 and diastolic 72.19±24.65, 91.58+3.66 were noted respectively in non-hypertensive and hypertensive patients. The present study showed that spinal anaesthesia created fall in blood pressure in both hypertensive and non-hypertensive patients including.

Keywords: Spinal anaesthesia, blood pressure, hypertensive, systolic, diastolic

INTRODUCTION

Anaesthesia is basically divided in to two categories one is general anaesthesia and second is regional anaesthesia while second category further subdivided into spinal anaesthesia, epidural anaesthesia and caudal anaesthesia (Emmett et al., 2001). Spinal anaesthesia is a medical technique through which medicines are given to the numb parts of body to block pain. Spinal anesthesia is given through shots in or around the spine. Procedure is adopted mostly in the belly, legs, or feet (Kleinman and Mikhail, 2006). It is observed that human body remains uncomfortable position during this procedure. It has been observed that spinal anesthesia has lower systemic side effects than general anesthesia (Aya et al., 2005). Spinal anaesthesia also called spinal block which is given by the needle tip to the spinal. Recently it is concluded that spinal anaesthesia is a better technique of anesthesia for cesarean delivery and other surgical procedures (Parameshwara 2001). Different studies reported that spinal anesthetic technique create effects on blood pressure of an individual how are operated (Nightingale and Marstrand 1981). Hypotension may occur as a side effect of this anesthetic technique. Researchers described that the blood pressure decreased because of cardiac sympathetic nerve blockage during high spinal anesthesia (Singla et al., 2006).

Hypertension is a major health problem in both developing and non-developing countries. Hypertension is an important risk factor for cardiovascular and cerebrovascular diseases. Spinal anaesthesia is very effective and most useful anesthetic technique for lower abdominal, pelvic and lower limb surgery. Spinal anaesthesia causes hypotension due to blockade of sympathetic out flow (Singla et al., 2006).

MATERIAL AND METHODS

This study was conducted in General surgery, Urology, Orthopedics and Gynae operation theaters in Jinnah Hospital Lahore. In the current study 86 individuals were selected. 56 were male and 30 were female. 36 patients were of 21-40 years of age while 50 patients were of 41-70 years old. Blood pressure was recorded for comparison.

RESULTS

Eighty six patients were selected for this study from general surgery, orthopedics, urology and gynaecology wards. They all received spinal anaesthesia for different types of surgeries. Out of 86 patients 56 were male and 30 were female (Table-2). According to age distribution 36 patients were between 21-40 years and 50 patients were between 41-70 years (Table-1) with mean age of 41.86 and 58.13 years respectively. Out of 86 patients 50 patients were hypertensive while 36 were non hypertensive (Table-3). Significant fall in blood pressure was observed in the patients. Means in systolic 119.31±38.21, 136±22.01 and diastolic 72.19±24.65, 91.58+3.66 were noted respectively.

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Table 1: Age distribution (n=86)

<table>
<thead>
<tr>
<th>Age(in years)</th>
<th>n</th>
<th>%age</th>
</tr>
</thead>
<tbody>
<tr>
<td>21-40</td>
<td>36</td>
<td>41.86</td>
</tr>
<tr>
<td>41-70</td>
<td>50</td>
<td>58.13</td>
</tr>
</tbody>
</table>

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Table 2: Gender distribution (n=86)

<table>
<thead>
<tr>
<th>Gender</th>
<th>n</th>
<th>%</th>
<th>age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>56</td>
<td>65.11</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>30</td>
<td>34.88</td>
<td></td>
</tr>
</tbody>
</table>

Table 3: Comparison of spinal anaesthesia in non-hypertensive and hypertensive patients (n=86)

<table>
<thead>
<tr>
<th>Spinal Anaesthesia</th>
<th>Individuals</th>
<th>Systolic</th>
<th>Diastolic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall in BP</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-hypertensive</td>
<td>n=36</td>
<td>119.31±38.21</td>
<td>72.19±24.65</td>
</tr>
<tr>
<td>Hypertensive</td>
<td>n=50</td>
<td>136±22.01</td>
<td>91.58±3.66</td>
</tr>
</tbody>
</table>

**DISCUSSION**

Spinal anaesthesia introduced by August Bier 1898 and it was first major regional technique in clinical practices. Spinal anaesthesia is very simple and has number of medical uses especially in operating conditions. Spinal block is usually a single shot technique. It is observed by different studies that most common complication created with spinal anaesthesia is hypotension (Dyer et al., 2003). But on the other hand spinal anaesthesia provides more health benefits during surgery like reduced blood loss, better operating conditions, minimal effects on arterial $O_2$ and $CO_2$ tensions of the patient etc.

In the present study it has seen that fall in blood pressure was 20(38%) in normotensive while 35(68%) in hypertensive patients of age range 21-70 years with mean values of systolic 119.31±38.2 and diastolic 172.19±24.65, 136±22.01,91.58±3.66 respectively. From the results of this study it had concluded that hypotension is more common in patients how receiving spinal anaesthesia. The study is correlated by another research conducted by NganKee et al., 2004 and concluded the same results. Current study showed that isobaric bivacaine spinal anesthesia produced a more marked hypotensive effect in the hypertensive than in normotensive patients. The results of this study are same like in the study of (Greene and Brull., 1993).

**CONCLUSION**

The present study showed that spinal anaesthesia created fall in blood pressure in both hypertensive and non-hypertensive patients.

**REFERENCES**