

# The Frequency of Post Dural Puncture Headache: Comparison of 25G Quincke Spinal Needle with 22G Whitacre

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## ABSTRACT

**Background:** Spinal anaesthesia is safe and effective alternative to general anaesthesia.

**Aim:** To compare 25G Quincke spinal needle with 22G Whitacre needle for the frequency of post dural puncture headache.

**Study Design:** Randomized controlled trial.

**Methods:** 200 patients undergoing elective cesarean section requiring spinal anaesthesia were included in this study. Divided into group A (Quincke) and group B (Whitacre) by using lottery method. Each group comprised of 100 patients. Bio data of all patients were noted and informed consent was taken. In operation theater 0.9% Saline (10 ml/Kg) given before spinal anaesthesia with 18G cannula. Subarachnoid injection was given at L<sub>3</sub> – L<sub>4</sub> level with hyperbaric bupivacaine (0.75%) in sitting position and dose was 1.5 ml.

**Results:** Mean age in both groups was 29.34 (SD 5.20) and distribution of post dural puncture headache in group A was 23% and in group B it was 8%.

**Conclusions:** fewer incidences of headache with Whitacre needle as compare to Quincke needle.

**Keywords:** Spinal Anaesthesia, Quincke spinal needle, Whitacre needle, post dural puncture headache.

## INTRODUCTION

Caesarean section is a lifesaving procedure<sup>1</sup>. Caesarean section can be performed both in general and spinal anaesthesia<sup>2</sup>. In some hospitals spinal anaesthesia is preferred due to avoiding of unanticipated difficult intubation which is a major concern<sup>3</sup>. Spinal anaesthesia is easy to perform and cheap as compare to general anaesthesia<sup>4</sup>. Postdural puncture headache is a complication of spinal anaesthesia which occurs within 24-72 hours after spinal anaesthesia<sup>5</sup>. It is due to leakage of cerebro spinal fluid<sup>6</sup>. Different factors influence it, like needle size, direction of bevel and shape<sup>7,8</sup>. The incidence is high with different type of needles<sup>9</sup>.

## MATERIAL AND METHODS

After approval by research and ethics committee, the study was carried out and 200 patients undergoing elective cesarean section were included. Informed consent was taken. Standard II monitoring was used. Patients were divided in two groups A (Quincke) and B (Whitacre) by lottery method. 100 patients in each group. In operation theater 0.9% saline (10 ml/Kg) given before spinal anaesthesia with 18G cannula. 1.5 ml .75% hyperbaric bupivacaine was administered at L<sub>3</sub> – L<sub>4</sub> level, in sitting position under aseptic condition in subarachnoid space. All patients were placed in supine position after spinal anaesthesia and a wedge was placed under right hip. Level of sensory block was assessed by pin prick prior to incision. Judicious intravenous fluids and injection ephedrine was used to manage hypotension. All the procedures were done by researcher himself and patients were followed for 72 hours for complain of headache. It was a randomized controlled trial and sampling technique

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was non-probability convenient. P value less than 0.05 considered significant and for statistical analysis SPSS version 10 was used and we used chi-square test. This study was done in Anaesthesia department of services hospital Lahore in one year.

## RESULTS

After the analysis we found that the mean age in both groups was 29.34 (SD 5.20) and post dural puncture headache was observed in 31 patients out of which 23 were from group A and 8 were from group B. P value was .003 which is significant.

Table 1: Descriptive statistics of age (years)

Age (years)	N	200
	Mean	29.34
	SD	5.20
	Minimum	21
	Maximum	40

Table # 2: Distribution of post dural puncture headache (PDPH) in accordance with study group.

PDPH	Study Groups		Total
	Quincke needle	Whitacre needle	
Yes	23(23%)	8(8%)	31(15.5%)
No	77(77%)	92(92%)	169(84.5%)
Total	100(100%)	100(100%)	200(100%)

Chi-square = 8.580

p-value = 0.003 (significant)

## DISCUSSION

Among regional anaesthesia techniques, spinal anaesthesia is common<sup>10</sup>. The advantages are reliability, dense motor block, rapid onset, simplicity and avoidance of airway complications<sup>11</sup>. Spinal anaesthesia has different complication and one complication is post dural puncture headache which is associated with type of needle<sup>12</sup>. In majority of cases this resolves spontaneously but in some patients headache lasts for months and years<sup>13-15</sup>. With the development of fine gauge spinal needle there is significant

reduction in post dural puncture headache<sup>16</sup>. The study of Turnbull DK and shepherd D concludes that there is no difference in headache by using 25G and 29G Quincke needle as compare to pencil point needle<sup>17</sup>. The study of Geurts J has opposite results and he concludes that with decreasing the gauge of needle there is significant difference in post dural puncture headache<sup>18</sup>. Similarly the study of de Diego FR et al favors my study and they conclude that Whitacre needles has less incidence as compare to Quincke needle<sup>19</sup>. Similarly the study of Vallejo MC et al also favors my study and they concluded that Whitare needle were better than Quincke needles<sup>20</sup>. In the study of srivastava V et al they concluded that in non-obstetric cases the incidence of post dural puncture headache is same whichever needle is used while in obstetric cases the incidence is more with Quincke needle as compare to Whitacre needle<sup>21</sup>.

## CONCLUSION

Type of spinal needle is more important than bore of needle. Whitacre needle has less incidence of post dural puncture headache as compare to Quincke needle.

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