

## Causes of refusal for regional anaesthesia in obstetrics patients

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### Abstract

**Objective:** To determine the frequency and causes of refusal for regional anaesthesia in obstetrics patients.

**Study design:** Descriptive Cross-sectional study.

**Place and duration of study:** The study was conducted at Department of Anaesthesiology & SICU, Jinnah Postgraduate Medical Centre, Karachi, for six months duration from 20th June, 2015 to 19th December, 2015.

**Introduction:** Regional anaesthesia for caesarean section is considered a safe technique and has gained worldwide popularity. The choice of anaesthesia techniques can be expected to differ between countries and culture and probably this could be the reason of low demand of regional anaesthesia in developing countries.

**Methods and patients:** A total of 159 subjects were included in this study. All pregnant women aged 25 to 40 years with para 1 or more having scheduled for elective Caesarean Section and who have refused regional anaesthesia were enrolled in this study. The causes of refusal for regional anaesthesia, level of education, parity and demographics of the women were obtained through interview.

**Results:** Mean age of the patients was  $30.49 \pm 4.80$  years. Cause for refusal was needle prick pain in 32 (20.1%), postspinal backache 62 (39%), possible complications like paralysis 14 (8.8%), peri-operative pain 24 (15.1%), and awareness during operation 27 (17%) patients.

**Conclusion:** Postspinal backache and needle prick pain were found to be the most common causes of refusal for regional anaesthesia in obstetrics patients

**Keywords:** obstetrics patients, causes of refusal for regional anaesthesia, caesarean section.

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### Introduction:

Most of the studies conducted in last few decades for quality improvement in anaesthesia techniques for caesarean section were either focused on drugs to prove their safety or on equipment like spinal and epidural needles to facilitate regional anaesthesia. Regional techniques for pregnant women are now considered the technique of choice due to several advantages including decreased risk of gastric aspiration, avoidance of exposure of anaesthetic depressant effects of drugs on neonates and lesser incidence of blood loss during surgery.<sup>1-2</sup> A scarce data is available for the reasons of refusal or low utility of regional technique in our country; however

it seems multi factorial including cultural differences, lack of knowledge and false beliefs. The rationale of study is to assess the magnitude of various causes of refusal and to generate local data. Thereby strategies could be developed to raise awareness of regional anaesthesia with clarification of false impressions, its benefits to the patient and infant, if found to be inappropriate.

### Methodology:

This study was carried out at the Department of Anaesthesiology & SICU, Jinnah Postgraduate Medical Centre, Karachi, for duration of six months from 20th June, 2015 to 19th December, 2015, after gaining approval from Ethics Review

Committee of Hospital and informed consent of patients. A total of One Hundred and Fifty-nine female subjects taking confidence level as 95%, least cause of refusal for regional anaesthesia was afraid of needle 7.1%, and absolute precision as 4%, were included in this study. Pregnant women aged 25 to 40 years, who had refused regional anaesthesia, scheduled for elective Caesarean section and Para 1 or more were included in study criteria. We excluded those women with contraindication to any particular type of anaesthesia, language barrier, and psychiatric disorders and disease like depression were excluded. Selected subjects were interviewed and data was collected on self structured proforma, where the causes of refusal to regional anaesthesia, level of education, parity and demographics of the women were noted.

Statistical analysis was done by using SPSS version 17. Frequency and percentage was calculated for causes of refusal for regional anaesthesia, educational status and parity. Mean and standard deviation was presented for participant's age. Effect modifiers were controlled through stratification of age, parity, education status, to see the effect of these on outcomes. Chi square test was applied and significance level was taken as 0.05.

### Results:

The results of the present study were expressed as mean value ( $\pm$ SD) and in percentile values. A total 159 subjects were included in this study. Mean age of the patients was  $30.49 \pm 4.80$  years.

Table-1: depicted that, there were 99 (62.30%) patients with  $\leq 30$  years of age and 60 (37.70%) patients with  $> 30$  years of age.

Table-2 showed the parity-wise frequency of patients. There were primipara 65 (40.90%), multipara 62 (39%) and grand multipara 32 (20.10%) patients.

Table-3 revealed illiterate educational status in 72 (45.30%) patients,  $\leq$ matric were 54 (34%), and  $\geq$ intermediate were 33 (20.80%) patients.

Table-4 showed causes of refusal for regional anaesthesia. The findings revealed that, there was needle prick pain in 32 (20.1%) patients, postspinal backache in 62 (39%), paralysis in 14 (8.8%), peri-operative pain in 24 (15.1%), and awareness during operation in 27 (17%).

Table 5 to 9 showed comparison of effects in terms of age, educational status and parity on the outcome.

Table 1: Age (Years) of the Patients (n=159)  
Mean $\pm$ SD (30.49 $\pm$ 4.80)

Age (Years)	No. of Patients (%)
$\leq 30$ (%)	99 (62.0%)
$> 30$ (%)	60 (37.7%)

Table 2: Parity among pregnant women (n=159)

Parity	No. of Patients (%)
Primipara	65 (40.9%)
Multipara	62 (39.0%)
Grand Multipara	32 (20.1%)

Table 3: Educational Status (n=72)

Educational Status	No. of Patients (%)
Illiterate	72 (45.3%)
$\leq$ Matric	54 (34.0%)
$\geq$ Intermediate	33 (20.8%)

Table 4: Causes of refusal for regional anaesthesia (n=159)

Causes of refusal	No. of patients	
	Yes (%)	No (%)
Needle prick pain	32 (20.1%)	127 (79.9%)
Postspinal backache	62 (39.0%)	97 (61.0%)
Paralysis	14 (8.8%)	145 (91.2%)
Peri-operative pain	24 (15.1%)	135 (84.9%)
Awareness during operation	27 (17.0%)	132 (83.0%)

### Discussion:

Regional anaesthesia for caesarean section is considered a safe technique and has gained worldwide popularity. The choice of anaesthesia techniques can be expected to differ between countries and culture and probably this could be the reason of low demand of regional anaesthesia in developing countries.<sup>3-4</sup> In a local study, 48.3% opted general anaesthesia as compared to 33.4% of regional anaesthesia,<sup>5</sup> whereas in

developed countries the rate of regional anaesthesia is more than 90% for elective caesarean section and general anaesthesia is used in only 9% of cases.<sup>6-7</sup> Presently in most parts of Europe and USA the rate of general anaesthesia is as low as 3% which seems unbelievable in our population.<sup>8</sup> Among those obstetrics patients who re-

in pre-operative assessment.<sup>9</sup> In our study, cause for refusal was needle prick pain in 32 (20.1%), postspinal backache in 62 (39%), paralysis in 14 (8.8%), peri-operative pain in 24 (15.1%) and awareness during operation in 27 (17%) patients. In a local study the causes of refusal in women undergoing Caesarean section were needle prick pain 23 (5.6%), postspinal backache pain 107 (26.1%), headache 29 (7.1%), paralysis 10 (2.4%), numb legs 12 (2.4%), inadequate anaesthesia 37 (9%) and met someone with bad experience of anaesthesia 32 (7.8%).<sup>5</sup> In another study the reasons for refusal to spinal anaesthesia were as follows: fear of awareness during operation 14 (7%) and failed spinal anaesthesia 2 (1%).<sup>10</sup>

Table 5: Comparison of needle prick pain as cause of refusal for regional anaesthesia with general characteristics (n=159)

Variables	Needle Prick Pain		Total	p-value
	Yes (%)	No (%)		
Age				
≤30	21 (65.6)	78 (61.4)	99 (62.3)	0.661
>30	11 (34.4)	49 (38.6)	60 (37.70)	
Parity				
Primipara	13 (40.6)	52 (40.9)	65 (40.9)	0.048
Multipara	8 (25)	54 (42.5)	62 (39)	
Grand multipara	11 (34.4)	21 (16.5)	32 (20.1)	
Educational status				
Illiterate	7 (21.9)	65 (51.2)	72 (45.3)	0.001
≤Matric	23 (71.9)	31 (24.4)	54 (34)	
≥Intermediate	2 (6.3)	31 (24.4)	33 (20.8)	

Table 6: Comparison of postspinal backache as cause of refusal for regional anaesthesia with general characteristics (n=159)

Variables	Postspinal Backache			p-value
	Yes (%)	No (%)	Total	
Age				
≤30	42 (67.7)	57 (58.8)	99 (62.3)	0.255
>30	20 (32.3)	40 (41.2)	60 (37.70)	
Parity				
Primipara	25 (40.3)	40 (41.2)	65 (40.9)	0.144
Multipara	20 (32.3)	42 (43.3)	62 (39)	
Grand multipara	17 (27.4)	15 (15.5)	32 (20.1)	
Educational status				
Illiterate	14 (22.6)	58 (59.8)	72 (45.3)	0.001
≤Matric	27 (43.5)	27 (27.8)	54 (34)	
≥Intermediate	21 (33.9)	12 (12.4)	33 (20.8)	

fused regional anaesthesia, 52% of the fears of all respondents were about paralysis and neurologic disorders, 42% about peri-operative pain, 38% about seeing the surgery and hearing the surgical procedure, 33% were worried of backache and 15% were afraid of needle. 94 of the 100 patients were convinced to receive regional anaesthesia after counseling and explanation with assurance

Most satisfaction studies of regional anaesthesia reported high levels of satisfaction, as shown here. Siddiqi and Jafri<sup>11</sup> demonstrated a high level of satisfaction (83.0%) and the desire to opt for spinal anaesthesia in the future (53.7%) among patients receiving spinal anaesthesia for Caesarean deliveries. Dissatisfaction rate and refusal rate were 3.8% and 6.7%, respectively in Charuluxananan et al.'s study.<sup>12</sup>

In Choi et al.'s study,<sup>13</sup> 31 out of 194 patients (16%) would reject receiving spinal anaesthesia if they had a chance to have it again. Sindhvananda et al.'s study,<sup>14</sup> which compared maternal satisfaction between epidural and spinal anaesthesia, revealed 90.0% satisfaction in the spinal group. A dissatisfaction rate of less than 15 percent was reported from other surveys on regional anaesthesia.<sup>15</sup> The main cause of discomfort from regional anaesthesia in Bhattarai et al.'s study<sup>16</sup> was immobility of lower limbs. Also, in Charuluxananan et al.'s study,<sup>12</sup> a low satisfaction score of spinal anaesthesia care was associated with the refusal of spinal anaesthesia. Choi et al.'s study<sup>13</sup> also demonstrated postoperative backache as a risk factor associated with refusing spinal anaesthesia in the future. Postoperative backache was commonly associated with satisfaction and the refusal of spinal blocks, even though the backache may not be directly related to the spinal block.<sup>17</sup>

Table 7: Comparison of paralysis as cause of refusal for regional anaesthesia with general characteristics (n=159)

Variables	Paralysis			P-value
	Yes (%)	No (%)	Total	
Age	≤30	10 (71.4)	89 (61.4)	0.459
	>30	4 (28.6)	56 (38.6)	
Parity	Primipara	8 (57.1)	57 (39.3)	0.139
	Multipara	2 (14.3)	60 (41.4)	
	Grand multipara	4 (28.6)	28 (19.3)	
Educa-tional status	Illiterate	4 (28.6)	68 (46.9)	0.005
	≤Matric	10 (71.4)	44 (30.3)	
	≥Intermediate	0 (0)	33 (22.8)	

Table 8: Comparison of peri-operative pain as cause of refusal for regional anaesthesia with general characteristics (n=159)

Variables	peri-operative pain			P-value
	Yes (%)	No (%)	Total	
Age	≤30	13 (54.2)	86 (63.7)	0.374
	>30	11 (45.8)	49 (36.3)	
Parity	Primipara	11 (45.8)	54 (40.0)	0.001
	Multipara	2 (8.3)	60 (44.4)	
	Grand multipara	11 (45.8)	21 (15.6)	
Educa-tional status	Illiterate	7 (29.2)	65 (48.1)	0.005
	≤Matric	15 (62.5)	39 (28.9)	
	≥Intermediate	2 (8.3)	31 (23.0)	

Table 9: Comparison of awareness during operation as cause of refusal for regional anaesthesia with general characteristics (n=159)

Variables	awareness during oper- ation			P-value
	Yes (%)	No (%)	Total	
Age	≤30	16 (59.3)	83 (62.9)	0.724
	>30	11 (40.7)	49 (37.1)	
Parity	Primipara	13 (48.1)	52 (39.4)	0.001
	Multipara	3 (11.1)	59 (44.7)	
	Grand multipara	11 (40.7)	21 (15.9)	
Educa-tional status	Illiterate	7 (25.9)	65 (49.2)	0.005
	≤Matric	20 (74.1)	34 (25.8)	
	≥Intermediate	0 (0)	33 (25)	

Choi et al.'s study<sup>13</sup> demonstrated that the number of punctures was a statistically meaningful factor for the refusal of spinal blocks. However, Schwabe and Hopf<sup>18</sup> reported that backache af-

ter a spinal block was not associated with patient characteristics or technical factors, but rather exclusively with pre-existing back pain. PDPH usually occurs within three days of the procedure<sup>19</sup> and could be underestimated, which might affect dissatisfaction and refusal rates. The advantages of regional anaesthesia include an awake mother at delivery, minimal depression of the newborn, and avoidance of the risks of general anaesthesia.<sup>20</sup> Recently, regional anaesthesia has gained worldwide acceptance, and its physiological effects provide a better outcome for caesarean section, moreover, general anaesthesia is associated with significantly high maternal morbidity and mortality.<sup>21</sup> A recent randomized control trial describes benefits of earlier intravenous cannula removal, ambulation, breast-feeding initiation and potential for shorter hospitalization period after caesarean delivery under spinal anaesthesia.<sup>22</sup>

Although most studies report high satisfaction levels for spinal anaesthesia, the satisfaction rate can be overestimated because patients like to please service providers by replying 'satisfied'.<sup>23</sup> A study was conducted to determine the patients' dissatisfaction after spinal anaesthesia, and it showed the following factors resulting in patient dissatisfaction; increasing number of attempts of spinal block, pain during spinal block, inadequate analgesia and post-operative urinary retention.<sup>24</sup> In a study by Bhattarai et al,<sup>25</sup> the main cause of discomfort from regional anaesthesia was reported to be the immobility of lower limbs. A study conducted by Sindhvananda et al.<sup>26</sup> revealed that post-dural puncture headache, pruritus, and PONV were predictors of dissatisfaction; in this study, pruritus resulted due to intrathecal morphine. In addition, post-operative backache was associated with dissatisfaction and refusal of spinal blocks in some studies.<sup>27</sup>

### Conclusion:

Postspinal backache and needle prick pain were found to be the most common causes of refusal for regional anaesthesia in obstetrics patients. Anaesthetic associated obstetric mortality has decreased during the last few decades mostly due to increase use and improved safety of neur-

axial anaesthesia techniques.

We recommend an early anaesthetic consultation and counseling in the antenatal period to reduce the rate of refusal for regional anaesthesia. During this visit, the advantages of regional anaesthesia and clarification of the false impressions about this technique should be discussed with the patient.

#### Role and contribution of authors:

Dr Muhammad Nadeem Muneer, Associate Prof, planning of this scientific study, searching related studies and discussing the results

Dr Shoaib Malik, Assistant Prof, statistical analysis of data and proof reading.

Dr Neel Kumar, FCPS resident, patients counseling and collection of data.

Dr Shahab Anwar, FCPS resident, patients counseling and collection of data.

**Conflict of Interest:** none

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