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Factors influencing patient preference towards general and regional anesthesia in patients presented for elective cesarean section

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Abstract

Out of all the common surgeries performed in women, Caesarean Section is one of them. In this procedure, General Anesthesia as well as Regional Anesthesia is given. But GA usage has been reduced due to risk of maternal mortality. Thus Spinal Anesthesia is the better alternative in 80 to 90% of Caesarean Sections performed. This cross sectional study was carried out from March 19-2018 up to April 19- 2018 in Obstetrics Unit of Lady Reading Hospital Peshawar and Rehman Medical Institute Peshawar. This study included 56 patients. Ages were between 18 and 42 years. The mean age was 30 years ±0.639. 30.4% patients' previous CS was performed under RA while GA was given in 35.7% patients. Patients good experience with RA (19.6%, N=11) is the main reason they prefer RA. Caesarean Section is the most trivial surgical procedure performed in Obstetrics patients. 85.7% patients are aware of the techniques of anesthesia used in CS. This coincides with the results of studies completed in Karachi, Hong Kong and United Kingdom which are 82.4%, 70% and 78% respectively. 32.1% of patients had selected GA over RA. But after properly educating them, they now prefer RA. From this we can see importance of effective preoperative information which has increase preference toward RA. Similar results had been given by other studies Patients' choice of anesthesia is based on their previous experiences rather than the risk or benefits of each technique. Educating such patients enhances their preference of RA.

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Introduction

Out of all the common surgeries performed in women, Caesarean Section is one of them (Ni *et al.*, 2017). In this procedure, General Anesthesia as well as Regional Anesthesia is given. But GA usage has been reduced due to risk of maternal mortality. Thus Spinal Anesthesia is the better alternative in 80 to 90% of Caesarean Sections performed (Fakherpour *et al.*, 2018). Spinal Anesthesia is better alternative in 80 to 90% of Caesarean sections performed due to Rapid Action Initiation, technique's simplicity, minimum usage of drug volume and concentration and low failure rate (Ni *et al.*, 2017; Fakherpour *et al.*, 2018; Montoya *et al.*, 2009).

All cases of Obstetrics need Anesthesia services (Schmidt *et al.*, 2012). The need of Caesarean Section in such patients is because of many reasons. The justification for Caesarean Section might be complication of pregnancy that cannot be handled without CS, it is the patient's choice, prolong and obstructed labor or when there is to save life of the patient (Johnson *et al.*, 2015).

According to WHO worldwide 15% of birth occur by cesarean section, lowest rate occur in Africa (3.5%) while highest rate occur in Latin America and the Caribbean (92%) (Informed Health.org., 2018).

The anesthesia techniques used for cesarean section are of two type which are Regional anesthesia (RA) and General anesthesia (GA). Regional anesthesia includes epidural, spinal or combination of epidural and spinal. The most common technique used for anesthesia in cesarean section is spinal anesthesia. In this anesthetics are injected in subarachnoid space at lumber region in single shot where entire lower half of the body below from the level of block is anesthetized. Less amount of drugs are used in spinal anesthesia compared to epidural and also it work faster.

The anesthetic is injected in epidural space at thoracic or lumbar regions of spine in case of epidural anesthesia. After 10 to 20 minutes pain is relieved by epidurals and it is used in postoperative pain management also.

Multiple drugs are used in general anesthesia to produce various actions like amnesia, analgesia, inhibition of autonomic reflexes and skeletal muscle relaxation. Patients are completely unconscious in GA and due to time limitation it is choice of anesthesia for emergency surgery where main consideration is given safe life of fetus and mother.

For CS the ideal anesthesia is RA and it has advantages over GA as low risk maternal mortality, less drugs used, mother may experience direct child birth and post-operative pain control. The disadvantages of RA are post dual puncture headache, hypotension, intraoperative discomfort and potential cardiac toxicity. It has been found that patients experience more nausea and vomiting with use of RA compared to GA (Afolabi *et al.*, 2012). Some study show RA and GA both are safe equally for baby but differential risks and benefits found for mother. However most of studies say GA has more side effects on babies and babies need resuscitation when born by Cesarean section (Afolabi *et al.*, 2012; Algert *et al.*, 2009). GA is preferred by patients because of high level of anxiety in patients presented for elective caesarian section. Patient's preference is affected by various factors like surgery type, culture diversity, previous anesthesia experience and preoperative knowledge.

Pakistan is developing country where patients lack knowledge of anesthesia, many obstetrics patients refuse regional anesthesia but very low data is available that why patients refuses Regional anesthesia (Ahmad *et al.*, 2011; Kadri *et al.*, 2014). The aim of study is to know patients awareness regarding choice of anesthesia in KP and find out the reasons of patient's preference towards general and regional anesthesia, the role of effective Anesthetists communication with patients preoperatively.

Materials and methods

Study design

Hospital based cross sectional study.

Study settings

The study was conducted in Obstetrics Unit Lady Reading Hospital Peshawar and Obstetrics. Unit Rehman Medical Institute Peshawar.

Sampling Technique

Simple randomized sampling method had used and all those pregnant patients who hadfulfilled our inclusion criteria from March 19-2018 up to April 19-2018 were been selected.

Sample size

Data had collected from Patients over 1 calendar month and had considered as a population. And then sample size with standard deviation less than 20 was calculated by the following formula.

n = z 2 x P (1 -p)/m 2

(n= sample size, N=population size and e = error (5%))

Because of limited duration of the research project we were not sure about our absolute sample which was depended upon the predetermined population size according to above mentioned formula. It's therefore we had collected data during the mentioned tenure from which we had got a sample size of 56.

Study Duration

4 months

Inclusion criteria

Those patients were included who were presented for elective cesarean section and had given verbal informed consents for anesthesia, pregnant patients aged between 18 to 42 years, ASA I and II were included.

Exclusion criteria

All emergency cases, patient refusal to answer questions, cognitive dysfunction, and history of psychiatric disease, contraindication to any particular type of an anesthesia or failure to understand Pushto, Urdu or English were excluded.

Data collection procedure

After being approval of the research proposal from Undergraduate Research Committee (URC)of the Institute of Paramedical Sciences(IPMS), ethical permission was obtained from the ethical board of the hospital to conduct the study. Then all the subjects eligible for the study were acknowledged about the aim and purpose of the study and verbal informed consent were obtained.

Patients, scheduled for elective CS, had surveyed before surgery. The survey was divided into two parts: the first part involved the age, education level, status of the patients, an early aesthesia preferences, early opinions and experiences related to RA or GA and assessment of preoperative fears and their reasons. And the second part of the survey involved patient's education by telling risk and benefits of regional and GA and providing them information about the procedure. detailed information were also given to those patients who did not know anything about anesthesia for their surgery and then they had asked that what type of anesthesia they will prefer. After patient education the second part of the Questionnaire was filled in which it was asked that either patient have changed their mind about early anesthesia preference or not.

Data analysis procedure

SPSS version 23 was used for data analysis and all variables were categorized. The result of each variable i.e. age, education status, knowledge about anesthesia, early anesthesia preference, reasons of their preference have shown in the form of tabulations and bar charts.

Results

This study done on 56 patients, age range between 18 and 42 years. The mean age patients was 30 years ±0.639. 15(26.8%) were uneducated while education level of 21(37.5%), 9(16.1%), 10 (17.9%) of the patients were high school, college level and master's degree holders.

The patients who aware of General and regional anesthesia were 48 (85.7%) whereas those who were unaware was 03(5.4%). In these patients, the main source of knowledge related to anesthesia was previous CS (60.7%), relatives (12.5%) and Anesthesiologist (10.7%). Those patients who had Cesearn section previously were 37 (66.1%), out of which 17 (30.4%) were operated under RA and remaining 20 (35.7%) had GA previously. Those who had no Cesearn section previously were 19 (33.9%). (Table 1, 2).

Table 1. Show Educational status, Knowledge, Previous anesthesia used and Preference toward anesthesia.

Variables	Frequency	Percentage
Education		
No education	15	26.8
Primary school	1	1.8
High school	21	37.5
College	9	16.1
Master's degrees	10	17.9
Total responders	56	100
Knowledge of patients about GA and RA		
Yes	48	85.7
No	3	5.4
Previous anesthesia type received		
Regional Anesthesia	17	30.4
General Anesthesia	20	35.7
Presented first time for surgery	19	33.9
Total	56	100
Current anesthesia preference		
Regional Anesthesia	28	50.0
General Anesthesia	18	32.1
Others[A]	10	17.9
Total	56	100

A= those who are unaware about the existing anesthesia techniques or presented for first time.

Table 2. Showing reason of preferring either type of anesthesia technique.

Anesthesia	Reason of preference	Frequency	Percentage
RA	Good previous experience via previous RA	11	19.6
	Bad experience via previous GA	08	14.3
	Due to family and relatives advice	08	14.3
	I want to remain awake during surgery	04	7.1
GA	Good previous experience via GA	06	10.7
	Bad experience via previous RA	01	1.8
	I do not want to see the procedure	04	7.1
	Fear of hearing noises	01	1.8
	Fear of back pain due to needle	05	8.9
Other[A]		08	14.3

RA= Regional anesthesia, GA= General anesthesia, A= those who have not selected any anesthesia technique.

The previous CS done under RA was 30.4% while under GA was 35.7%. For current CS, 50% preferred RA and 32.1% preferred GA.46 (82.1%) was the patients who had selected the anesthesia technique. Out of total 56, patients who had not selected either type of anesthesia were 10 (17.9%), because they have been unaware about available anesthesia technique or presented for first time.

Good previous experience with operation under RA (19.6%, N=11) is main concern of patients RA preference. Bad experience with GA (14.3%, N=08) and due to relative advice (14.3%, N=08) the RA is preferred more compare to GA. Reason behind the GA preference is good previous experience with GA (10.7%, N=6) or bad experience with RA (1.8%, N=1). Fear of needle and hearing noises was also reason of interest in GA. (As shown in table 02)

Discussion

The most common operative procedure performed In Obstetric patients is Cesarean section (CS). For benefit purposes to both mother and baby regional anesthesia is preferred anesthesia. The use of regional anesthesia in modern obstetrics has raised worldwide (To *et al.*, 2007; Okafor *et al.*, 2009). Many studies shows that many CS is still done through GA (Ismail *et al.*, 2012; Johnson *et al.*, 2002). The present study focus to find the awareness of patients regarding different anesthesia techniques like GA and RA and factors which influence their preference.

In our study 85.7% of patients are aware of anesthesia techniques in CS. It is found matching with the results of studies done Karachi, Hong Kong and United Kingdom which was 82.4%, 70% and 78% respectively (Colvin *et al.*, 2012; Ismail *et al.*, 2012). But found much higher than results study in Ethiopia which was 31.3% (Jemal *et al.*, 2016). This may not true scenario of anesthesia awareness in our population as 54% of patients were having higher secondary education and above, as education bring awareness in people (Johnson *et al.*, 2002; Bjørnestad *et al.*, 2004).

GA was preferred in 32.1% patients in our study and 77% in study from jimma university (Jemal *et al.*, 2016). In study found from aga khan university rate GA 48% it might be due to previous experience with GA or low awareness in participant of Jimma University. Study from KP show 32.1% patients preferred GA while 46% patients preferred in study done in turkey (Ismail *et al.*, 2012; Johnson *et al.*, 2002). This rate of GA is higher than develop countries where it is only 9% (Bjørnestad *et al.*, 2004; Halpern *et al.*, 2008).

RA was preferred by 50% in our population whereas preference found in Karachi was 33% (Ahmad *et al.*, 2011). The source of knowledge related to anesthesia technique was previous experience 60.7% and similar results were found in other study from isra and Ethiopia (Kadri *et al.*, 2014; Jemal *et al.*, 2016). Pakistani women are aware about available anesthesia techniques however they have lack of knowledge about risks and importance of each technique leading confusion of what type to choose (Saunders *et al.*, 2006).

The patients who were confuse of which type to choose was 17.9%, these were patients who having CS for first time and were unaware of existing anesthesia types. Most of them selected and 32.1% of patients who preferred GA initially RA after proper explanation. From this we can see importance of effective preoperative information which has increase preference toward RA. Similar results had been given by other studies (Spielman *et al.*, 1985; Karaaslan *et al.*, 2014).

Preoperative education should be given to patients to explain advantages, disadvantages and complication of each type of anesthesia available for surgery, so that patient can choose which appropriate and suitable to them (Spielman *et al.*, 1985).

Conclusion

Most of patients are aware of anesthesia technique as many of them have had been gone through CS at least one time before. The preference of patients toward anesthesia is majorly based on previous experience of anesthesia they received rather than knowing risk and benefit. Pre-operative education in such like patients greatly enhances their preference toward RA.

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