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The Anaesthetic Technique of Choice among Pregnant Women fo r Caesarean Section in a Tertiary Health Centre

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Abstract:
Objective: *This study is to ascertain the preferred choice of anaesthetic technique and their reasons, among pre gnant women schedule for caesarean section during preoperative visit in Federal Teaching Hospital, Gombe.*
Methodology: *This was a three year prospective study [from June, 2010- May, 2013] of pregnant women sched uled for either elective or emergency caesarean section. During the preoperative visit, patients were counselled and consent obtained on either regional or general anaesthesia and their reasons for the choice documented.*
Results: *A total of 1,350 women were interviewed during the three years period of the study.]The total of four h undred and sixty one patients (n=461, 34.1%) were scheduled for emergency caesarean section, while eight hun dred and eighty nine patients (n=889, 65.9%) were scheduled for an elective caesarean sections. They were age d 17-40 years with the mean age of 27.84 +/-4.43 years. The parity ranged from 1-12. Majority of the patients 9 45 (70%) preferred regional anaesthesia, while 405 (30%) preferred general anaesthesia The common reasons f or their preference to regional anaesthesia include early contact with their babies, fear of death from general a naesthesia, want to know what is going on in the theatre, general anaesthesia is more dangerous, patient being awake, reduced blood loss, cheaper and well tolerated however, others preferred general anaesthesia because o f fears of the complications of regional anaesthesia e.g. backache, headache etc.*
Conclusion: *We conclude that regional anaesthesia is the preferred technique of choice for most pregnant wom en undergoing caesarean sections in our centre. Detail preoperative review with emphases on counselling of the patients by the anaesthetists on the advantages of regional anaesthesia over the general anaesthesia will encou rage the high preference of regional over general anaesthesia. We therefore, recommend that preoperative revie w should be encouraged in all hospitals and in all patients undergoing either emergency or elective caesarean s ections.*
Key words: *Choice of anaesthesia, pregnant women, Caesarean sections*

I. Introduction:

Most caesarean sections were previously performed under general anaesthesia but there has been an inc reasing trend worldwide to the use of regional anaesthesia for caesarean deliveries.[1] The reason for this shifts are not far-fetched and may not be unconnected to the complications of general anaesthesia such as difficult airway , regurgitation and aspirations, and hypoxaemia, which constitutes significance causes of maternal morbidity an d mortality.[2] The renewed interest in regional anaesthesia in obstetrics has led to its routine use for caesarean section. Small, non-cutting needles have decreased the incidence of post- dural puncture headache making regio nal anaesthesia acceptable in this population. The advantages of regional anaesthesia particularly the spinal anae sthesia include rapid onset of action, low local anaesthetic doses and good quality; and reliability of the block.[3]

The choice of anaesthetic techniques is guided by the maternal factors, indications for surgery, intercurr ent medical diseases, anaesthetist's preferences and equally important is the patient choice. Regional anaesthesia increases maternal satisfaction and bonding between mother and her newborn infant,[4] and it is also associated w ith shorter hospital stay.[5] Currently, general anaesthesia is usually reserved for caesarean deliveries when region al anaesthesia is absolutely contraindicated.[6]

There are absolute and relative contraindications to regional anaesthesia. The absolute contraindication s includes infection at the site of injections, hypovolaemia, indeterminate neurologic diseases, coagulopathy, inc reased intracranial pressure and equally important is the patient refusal.[7] Therefore, since patient refusal is an ab solute contraindication, we therefore, documented the choice of anaesthesia and the reasons of their choice follo wing detailed counselling during the preoperative visit within the study period.

II. Patients And Methods:

This is a prospective cross-sectional questionnaire based study on the consent taken on the pregnant wo men undergoing caesarean delivery and the reasons for their preferred choice in our centre. Questionnaires were filled after detail counselling on the technique of anaesthesia and signed consent on either regional or general an

aesthesia was obtained. No participant declined participation in the study. Respondent were told that with region al anaesthesia they will be awake without feeling pains; they will see their babies immediately after delivery. Ot her relevant information obtained include, history of previous caesarean sections, types of anaesthesia during the previous caesarean section, preference for either regional or general anaesthesia and the reasons for the choice o f anaesthetic technique. The research and ethical committee of the hospital approved the study. The results are p resented as frequency and percentages**.** The association between clinical variables and anaesthetic services were tested using Chi square test. The level of significance is set at a probability of 0.05

III. Results:

A total of 1,350 respondents were interviewed during the three years' period of the study. The socio-de mographic characteristics of the patients are as shown in Table 1. The age range was 17-40 years, with a mean o f 27.84 +/-4.43 years. The parity ranged from 1-9 with the parity of 2-4 constituting 65.6% (n=886) of the patien ts. Five hundred and sixty four of the patients (41.8%) had at least secondary education while 13% were illiterat es. Housewives (n=713, 52.8%) and Muslim (n= 918, 68%) constituted the majority of the patients. Those havi ng surgery for the first time were 767 (56.8%), while those for repeat caesarean section were 583 (43.2%).

Table1: Socio-demographic characteristics of the patients interviewed (n= 1350)

Characteristics	n	(%)
Age (years)		
< 20	664	49.2
20- 24	253	18.7
25- 29	154	11.4
30- 34	123	9.1
35- 39	94	7.0
>40	62	4.6
Total:	**1350**	**100**
Parity		
1	254	18.8
2- 4	886	65.6
>5	210	15.6
Total	**1350**	**100**
Marital status		
Married	1332	98.7
Single	18	1.3
Total:	**1350**	**100**
Educational status		
Primary	456	33.8
Secondary	564	41.8
Tertiary	154	11.4
Illiterate	176	13.0
Total:	**1350**	**100**
Occupation		
House wife	713	52.8
Business woman	56	4.1
Civil servant	152	11.3
Applicant	226	16.7
Student	203	15.1
Total:	**1350**	**1**
Religion		
Moslem	918	68
Christian	432	32
Total:	**1350**	**100**
Previous caesarean section		
Yes	583	43.2
NO	767	56.8
Total:	**1350**	**100**

Table II details the anaesthetic preferences and the reasons proffered for the choice of anaesthesia. Maj ority of the patients (n= 945, 70%) preferred regional anaesthesia and the remaining (n=405, 30%) preferred gen eral anaesthesia. The commonest reason for regional anaesthesia preference was the ability to see their babies im mediately after the surgery and the commonest reason of preference of general anaesthesia was fear of being aw

ake. However, some patient gave multiple reasons for their choice.

Table II: Anaesthetic of choice and reasons proffered (n=1350)

Variables	**n**	**(%)**
Regional anaesthesia (RA)	**945**	**70**
Reasons for preference for RA		
Want to see baby immediately	252	26.7
Fear of not waking up from GA	112	11.9
GA more dangerous	105	11.1
Want to see what is happening in theatre	78	8.2
Cost	69	7.3
General anaesthesia (GA)	**405**	**30**
Reasons for preference for GA		
Fear of being awake	132	32.6
Anxiety	78	19.3
Want to be asleep	62	15.3
Do not want to be feel pain	78	19.3
Do not want to see the theatre	92	22.7
Fear of nightmare	71	17.5
No reason [Don't now]	128	9.5
Give me the best	270	20

The relationship between some demographic characteristics and choice of anaesthetic technique are sho wn in Table III. Parity (X^2= 60.3, P= 0.00), Education (X^2= 1.93, P= 0.00) and Occupation (X^2 = 22.13, P= 0.00) were significantly associated with the preference for regional anaesthesia, while Age (X^2= 3.53, P= 0.06), Religi on (X^2 = 0.00, P= 0.99) and Previous Caesarean section (X^2 =0.16, P= 0.69) had no significant influence on pref erence of one form of anaesthetic technique over the other. Of the total of five hundred and eighty three patients (n=583) that had previous caesarean section delivery, three hundred and eighty seven (n=387, 66.4%) prefer to h ave regional anaesthesia as a technique of choice and one hundred and ninety six (n=196, 33.6%) prefer to have general anaesthesia.

Table III: Relationship between some socio-demographic parameters and the choice of anaesthetic techni que.

	Types of Anaesthesia		
	RA	**GA**	**TOTAL**
Ages (yrs)			
< 20	443	221	664
20- 24	182	71	253
25- 29	107	47	154
30- 34	102	21	123
35- 39	69	25	94
>40	42	20	62
Total	**945**	**405**	**1350**
X^2 = 3.53, P= 0.06			
Parity			
1	184	70	254

2- 4	667	219	886
>5	120	90	21
0			
Total	**971**	**379**	**1350**
X^2 = 60.3, P= 0.000			
Educational status			
Primary	287	169	45
6			
Secondary	424	140	56
4			
Tertiary	86	68	15
4			
Non-literate	89	87	176
Total	**886**	**464**	**13**
50			
X^2 =1.93, P= 0.00			
Occupation			
House wife	582	131	713
Business woman	32	24	56
Civil servant	96	56	1
52			
Student	141	62	2
03			
Applicant	164	62	
226	**Total**		**1015**
335	**1350**		
X^2 = 22.13, P= 0.00			
Religion			
Moslem	676	242	
918	Christian		318
114	432		
Total	**994**	**356**	
1350			
X^2 = 0.00, P= 0.99			
Previous caesarean section			
Yes	387	196	
583			
NO	476	291	
767			
Total	**863**	**487**	
1350			
X^2 = 1.26, P= 0.26			

IV. Discussion:

This study show high preference of regional anaesthesia of 70% of our respondents over general anaest hesia during preoperative visit which defer with the study reported by Bukar, et al[8] from a tertiary centre in the s ame region of only 29.9% that prefer regional anaesthesia over general anaesthesia among ante-natal attendees. They advocated the low preference on regional anaesthesia to lack of access to information regarding the types o f anaesthetic techniques and lack of anaesthetic manpower in their centre. Their study was done among pregnant women during antenatal visit while ours was during preoperative visit. However, in our study the high preferen ce for regional anaesthesia may be as a result of access to information regarding the types of anaesthetic techniq ue during preoperative visit which is compulsory, where counselling is done before consent was taken. Our cen tre also has more of the anaesthetic manpower.

Recent studies have shown that both general and regional anaesthesia are safe but regional anaesthesia gives better maternal and foetal outcomes[9] Moreover, in a study by Van Houwe et al[10] reported as high as 80% of pregnant women preferred regional anaesthesia, the reason was due to easy accessibility of information on an aesthesia technique which is in an agreement with our findings. However, in the study by Imarengiaye, et al the

y reported only 43% use of regional anaesthesia in obstetrics patients for caesarean sections.

Reports indicate similar trend with the growth of regional anaesthesia for caesarean section in the Unit ed State of America. Hawkins, et at [12] showed that for caesarean section, general anaesthesia decreased from 35 % in 1981 to 12% in 1992 for hospital with over 1500 deliveries per annum, and from 46% to 22% in hospital w ith annual delivery rate of over 500. These changes parallel the development of obstetric anaesthesia as a sub-sp ecialty. It is likely that the use of regional anaesthesia for caesarean section in our hospital may improve further as the obstetric anaesthesia unit gains foothold.

Various reasons were proffered for preference of one anaesthetic technique over the other. The commonest reason is the advantage of seeing their babies immediately after the delivery and the fear of the complications of general anaesthesia , however, significant number said "Give me your best" which entails that regional anaesthesia is preferred. The majority of t hose who preferred general anaesthesia did so because of the fear of being awake but with proper counselling to allay their fear the consent for regional anaesthesia will improve. Fear of death under general anaesthesia was th e leading concern for those undergoing anaesthesia in previous studies.[13] however, only 11.9% of our responden ts thought that death under general anaesthesia was the reason for the preference of regional anaesthesia.

In conclusion, regional anaesthesia is safer and the most preferred over general anaesthesia among pre gnant women for caesarean section in our centre. It is recommended that regular preoperative visits should be co nducted by anaesthesiologists, proper and detail counselling of pregnant women on various anaesthetic techniqu es during such visits will significantly improve patient consent for regional anaesthesia for caesarean sections in developing countries.

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