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GENERAL ANESTHESIA VERSUS SPINAL ANESTHESIA ON FINENESS OF LIFE IN PREGNANT UNDERGOINGCESAREAN DELIVERY ON MOTHER REQUEST IN TALL-AFAR CITY.

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ABSTRACT

INTRODUCTION

The aim of this study was to determine whether pregnant female who undergo general anesthesia (GA) for cesarean delivery compared with spinal anesthesia (SA) differ regarding their perceived HRQoL(health related quality of life), which can be explained to pregnant mothers by obstetricians and anesthesiologists in their preoperative visit.

MATERIALS AND METHODS

This observational cohort study was conducted in a Tall-afar hospital. We enrolled 100 pregnant women with American Society of Anesthesiologists (ASA) class II status, scheduled for CDMR (cesarean delivery on maternal request) with GA or SA. Participants assessed their state of health with the EuroQoL-5 Dimensions-3 Levels (EQ-5D-3L) self- administered questionnaire at four time points: 4 hours before cesarean delivery, 12 hours after cesarean delivery, 10 day and 20 day after cesarean delivery. Patients also rated their health on the EQ visual analog scale. Exclusion criteria were refusal to give informed consent or contraindications for neuraxial anesthesia (Intrathecal lidocain**).**

We recruited 50 eligible patients in each group. Before enrollment, informed consent was obtained from each woman by the anesthesiology resident or attending, that this person did not have a role in the group assignment. Anesthesia modality was based on patient's preference, after benefits and hazards of each anesthesia technique were discussed to them. Induction of anesthesia was done by propofol and succinylcholine and 0.05 mg/kg morphine.

Spinal anesthesia was given by intrathecal administration of 100 mg of lidocain 0.5% and 20 microgram of fentanyl. with 1ml of ephedrine solution intravenously (Ephedrine is a prescription medicine used to treat the symptoms of low blood pressure during anesthesia (Hypotension) Ephedrine belongs to a class of drugs called Alpha/Beta Adrenergic Agonists. Dilute 1 mL\ 50mg of Ephedrine Hydrochloride MYX Injection to 10 mL with saline 0.9% to produce a 5 mg/mL solution. This solution should be given as a slow intravenous injection of 5 mg (maximum 10 mg), repeated as needed every 3-4 minto a maximum of 30 mg) with 500 ml of normal saline 0.9 %.

Post-operative analgesia was provided by patient-controlled analgesia in both groups with bolus doses of 1 mg morphine per 15 minutes lock time. Surgeries were performedusing the P fannenstiel incision.

An anesthesiology resident obtained demographic information and past obstetric history. Participants assessed their state of blood pressure before and during operation.

Instructions for the respondent were included in the questionnaire.

A trained nurse handed out the questionnaire and provided more instructions, as needed. A trained nurse filled out the questionnaire through a phone call interview at 10 day and 20 day follow-up.

The study based on follow up blood pressure of 2 group before and during operation and post operation and EQ-5D-3L includes the five dimensions mobility, self-care, usual activities, pain/discomfort, and anxiety/depression rated as "no problems", "some problems", or "extreme problem". Patients also rated their health on the EQ visual analog scale (EQ-VAS) from 100 mm "best imaginable health state" to 0 mm "worst imaginable health state".

RESULT

In this study we enrolled 100 pregnant women, eligible for CDMR who chose spinal anesthesia (50 women) or

general anesthesia (50 women) as their anesthesia modality of choice. The mean age of women was 25.5 with a range of 18 to 33 years old.

There was no statistically significant difference regarding age groups, education level, number of abortions, and number of previous general anesthesia. In the SA group, 11 (14%) of women had the experience of spinal anesthesia before, while this number was30 (37%) for GA group (p = 0.000).

Demographic and clinical characteristics of women who underwent spinal anesthesia versus general anesthesia.

Spinal anesthesia N (%)	**General anesthesia N (%)**	**P value**		
Age	≤ 19 y	12 (15)	10 (12)	0.89
	19 – 35 y	49 (61)	49 (61)	
	≥ 35 y	19 (24)	21 (26)	
Education	8^{th} grade or le	24 (30)	36 (45)	0.13
	High School	25 (31)	33 (44)	
	University	21(26)	19 (24)	
Number of children	0	32 (40)	26 (33)	0.015
	1	45 (56)	28 (35)	
	≥2	21 (25)	9 (11)	
Abortion	0	45	56	0.9
	1	12	2	
	2	10	7	
	≥3	13	15	
Previous spinal anesthesia	Yes	11(14)	30 (37)	P=0.011
	No	69 (86)	50 (36)	
Previous general anesthesia	Yes	45 (56)	45(56)	P=1.11
	No	35 (44)	35 (44)	

Because the reported level 3 problems were low, as suggested by the questionnaire guideline, we dichotomized the EQ-5D levels into "no problem" (level 1)and "problems" (levels 2 or 3) The EQ-5D dimensions were not statistically different before the cesarean deliverybetween the two groups.

Regarding mobility in the first 12 hours after cesarean delivery (CD), more women in SA group reported no problems compared to women in the GA group (61% vs. 32% women, P = 0.00). There was no statistical difference in mobility at 10 day or 20 day after cesarean delivery.

Similarly, the self-care dimension was only different at 12 hours after CS (70% women inSA group reported no problems vs. 45% in the GA group, p = 0.001.(Regarding "usual activities", more women in SA group reported no problems comparedto women in the GA group at 10 day (85% vs. 36%, p = 0.00) and 20 day (98% vs. 85%, p = 0.00) after cesarean delivery.

More women who underwent spinal anesthesia reported no pain/discomfort at 12 hours and at 20 day after CS compared to the GA group, 23% vs. 3% (p = 0.007) and 55% vs.37% (p = 0.007), respectively.

There was no difference in anxiety/depression dimension between the two groups at alltime points. More data are shown in Table 2.

Table 2: Frequency (%) of reported problem by dimension and anesthesia modality group before and after caesarian section.

EQ-5D Dimension		**Before CS**			**12 Hours after CS**			**10 day after CS**			**20 day after CS**		
		SAG	**GAG**	**P valu**	**SAG**	**GAG**	**P value**	**SAG**	**GAG**	**P value**	**SAG**	**GAG**	**P Value**
Mobility	No Problems	78 (98%)	76 (95%)	0.68	51 (61%)	24 (32%)	0. 00*	79 (99%)	74 (93%)	0.11	80 (100%	77 (96%)	0.24
	Probems	2(2%)	4(5%)		29 (36%)	56 (70%)		1(1%)	6(7%)		0(0%)	3(4%)	
Self-care	No Problems	80 (100%	78 (98%)	0.49	59 (70%)	38 (45%)	0. 01*	80 (100%	78 (98%)	0.49	80 (100%	77 (96%)	0.24
	Probems	0(0%)	2(2%)		21 (21%)	38 (45%)		0(0%)	2(2%)		0(0%)	3(4%)	
Usual Activities	No Problems	79 (99%)	77 (98%)	0.62	13 (16%)	7(9%)	0.23	72 (85%)	30 (36%)	0. 00*	79 (98%)	64 (85%)	0. 00*
	Problems	1(1%)	3(4%)		67	73		8(10%	50		1(1%)	16	

					(84%)	(91%)			(62%)			(20%)	
Pain/ Discomfort	No Problems	68 (85%)	61 (76%)	0.23	16 (23%)	4(3%)	0. 07*	15 (19%)	11 (14%)	0.52	47 (55%)	29 (37%)	0. 07*
	Problems	12 (15%)	19 (24%)		64 (80%)	76 (95%)		65 (81%)	69 (86%)		33 (41%)	51 (64%)	
Anxiety/ Depression	No Problems	50 (63%)	45 (56%)	0.52	75 (94%)	73 (91%)	0.76	65 (81%)	54 (68%)	0.069	65 (81%)	54 (68%)	0.069
	Problems	30 (37%)	35 (44%)		5(6%)	7(9%)		15 (19%)	26 (32%)		15 (19%)	26 (32%)	

SAG:Spinal anesthesia group,GAG:General anesthesia group.

In repeated measurement analysis (Figure1), the between groups test indicated that the effect of "group" was significant (p = 0.006), consequently the graph showed that the lines for the GA group and SA group were rather far apart. The within subject test indicated that there was a significant time effect, in other words, the groups did change over time (p = 0.000), in both groups EQ-VAS score decreased 12 hours after CS and gradually increased over time within 20 day. Moreover, the effect of interaction between time and group was significant (p = 0.000), suggesting that the effect on groups was not similar over time. The two groups started off with the same EQ-VAS score, however, both decreased over time with different slope resulting in different scores at 12 hours after CS. Then the scores increased in both groups over time and ended up being rather close at 20 day after CS.

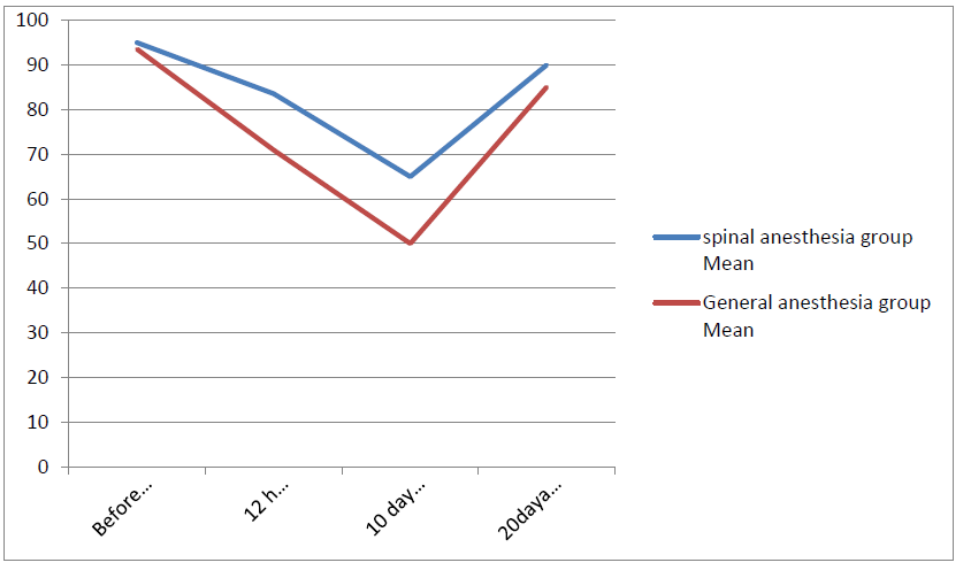

Fig 1: (time trend of EQ-VAS score in spinal and general anesthesia groups.

Because the effect of interaction between time and group was significant, we compared the EQ-VAS scores in the two groups at each time point. There was no difference in the mean EQ-VAS score at baseline between the two groups (83.59 ± 18.02 vs. 75.31 ± 11.51 in SA group and GA group, respectively, p = 0.20). At 12 hours after CS, the mean EQ-VAS score was higher in SA group compared to GA group (65.81 (17.72) vs. 56.96 (18.85), p = 0.007). Similarly, EQ-VAS score was higher 10 day after CS in SA group (83.58 (15.51) vs.

70.94 (17.04), p = 0.000). 20 day after CS, the mean EQ-VAS scores were 83.75 (16.80) in SA group and 93.5 (18.56) in the GA group, which was not statistically different (p = 0.50). More details are shown in.

Table 3: EQ-VAS score in spinal anesthesia and general anesthesia groups. EQ-VAS :EQ visual analog scale.

Time Iapas	Spinal anesthesiagroup Mean (SD)	General anesthesiagroup Mean (SD)	P-Value
Before cesareanSection	83.59 ±18.02	75.31 ±11.51	0.20
12 hours after cesarean section	65.81 ±17.72	56.69 ±18.85	0.007*
10 day after cesarean section	83.58 ±15.51	70.94 ±17.04	0.000*
20 day after cesarean section	83.75 ±16.80	93.50 ±18.56	0.50

DISCUSSION

Our results indicate that fewer women who selected spinal anesthesia as their anesthesia modality reported "Pain/Discomfort" at 12 hours and 20 day after cesarean delivery.

Pain control after CS is important, especially after cesarean delivery because uncontrolled pain not only affects the new mother but also unfavorably influences new born child-care. Neuraxial anesthesia provides anesthesiologists with an effective and convenient route of opioid administration, and in many countries it is being used as the preferred method of postoperative pain management after cesarean delivery. One of the combinations that are being used for intrathecal injection is lidocain and meperidine, which was used in our SA subjects. In a previous study, spinal anesthesia was shown to be more effective than general anesthesia in terms of pain control during the first two hours post-operatively in transurethral procedures.

This is in agreement with our findings in patients with SAG who reported less pain scores immediately after CS. As a further matter, it is not unexpected that women in SAG in our study reported less pain even one month after CS. A retrospective studyconducted on 857 subjects who underwent elective cesarean delivery found that the higher pain scores remembered in the immediate postoperative period is an independent risk factor for development of persistent pain after cesarean delivery.

Moreover, Eisenach et al. reported that women with severe acute post-partum pain had a 2.5-fold increased risk of persistent pain compared to mild postpartum pain.

In addition, more women in this group had "no problem" in their "usual activities" 10 day and 20 day after cesarean delivery time points.

Consistent with our findings showed that neuraxial anesthesia enables patient to return to normal daily activities earlier than general anesthesia. Moreover, the EQ-5D general health score was higher 12 h after cesarean delivery with regional anesthesia compared to general anesthesia.

CONCLUSION

We determined that compared to general anesthesia, spinal anesthesia with ephedrine intermittent doses and crystalloid loaded is the technique of choice for cesarean section because not only it avoids a general anesthetic and the risk of failed intubation, but also because it provides effective pain control, mobility and fast return back to dailyactivities for new mothers and increase their quality of life.

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