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Comparison clinical efficacy of dexmedetomidine and magnesium sulphate as an adjuvant to bupivacaine for transverse abdominis plane block in caesarian section for post operative analgesia

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Abstract: Background: The Transversus Abdominis Plane (TAP) Block is a method used for regional anaesthesia. It offers analgesia during lower abdominal surgery, especially when parietal wall pain is a significant source of discomfort. Through the local anaesthetic deposition between the Transversus Abdominis muscle and internal oblique muscle, it permits sensory blockage of the lower abdominal wall's skin and muscles. In a hospital-based, prospective observational study we assessed the effectiveness of unilateral TAP Block with bupivacaine for postoperative analgesia in hernia repair.
Material and Methods: After institutional research ethics committee approval, the M.G.M Medical College and M.Y Hospital Anesthesiology Department will conduct this prospective randomised controlled study.Convenient sampling was used90 to randomly assign 30 patients from the American Society of Anesthesiologists physical status grade I–II, age 20–40, to three groups:
Group B (n=30) received TAP blocks on both sides with 18 ml 0.25% bupivacaine and 2 ml normal saline.
Group BM (n=30) patients received TAP blocks on both sides with 18 ml 0.25% bupivacaine, 1.5 ml (150 mg) mgso4, and 0.5 ml NS.
Group BD (n=30) patients received TAP blocks on both sides with 18 ml of 0.25% bupivacaine mixed with 2 ml of NS and 0.5 mcg/kg dexmedetomidine.
A 10-point VAS assessed post-operative analgesia. After securing intravenous lines, all patients received 10–15 ml/kg Inj. Ringer Lactate preloading injections. Premedication consisted of 0.2 mg glycopyrrolate intravenously and 4 mg ondansetron intravenously 30 minutes before surgery.
Results: Combination of 0.25% bupivacaine and 150mg magnesium sulfate and combination of 0.25% bupi¬vacaine and 0.5mcg/kg dexmedetomidine provides longer duration of analgesia compared to 0.25% bupivacaine alone.
Conclusion: When utilized in patients undergoing inguinal hernioplasty, TAP Block with 0.25% bupivacaine offered powerful and longer duration of analgesia, with little any need for diclofenac. There were no side effects linked to TAP Block or the medications being tested.

Keywords: TAP-Block; Bupivacaine; Postoperative analgesia; VAS score.

1. Introduction

The transversus abdominis plane (TAP) block is a form of localisedanaesthetic that relieves pain in the skin and muscles of the anterior abdominal wall, as well as the parietal peritoneum [1]. Since it was first described a decade ago, it has undergone numerous improvements, demonstrating its potential utility for an increasing variety of surgical procedures [2]. In 2001, Rafi initially described the TAP block [2]. He described

it as a refined abdominal field block with a single anaesthetic injection into the TAP, a region traversed by significant nerve branches. This was a major improvement above previous procedures requiring repeated injections [4]. In this technique using surface anatomical markers, the TAP was obtained by first identifying the lumbar triangle of Petit, a region bounded medially by the external oblique, posteriorly by the latissimus dorsi, and inferiorly by the iliac crest [2].

A 24-gauge, 2-inch needle with a blunt tip was then inserted perpendicular to the skin through a previous skin incision until a single confirmatory "pop" was heard. This sensation was believed to indicate the appropriate needle depth for anaesthetic administration. In 2004, McDonnell et al. presented preliminary research on TAP blocks in cadavers and healthy volunteers at the American Society of Anesthesiologists' scientific meeting [5]. Despite being known as the regional abdominal field infiltration (RAFI) technique, the authors presented preliminary evidence to establish the anatomical basis for TAP blocks and demonstrated their efficacy. Loss of sensation from the xiphoid to the pubic symphysis following local anaesthetic administration to the TAP via the triangle of Petit. McDonnell and his colleagues had already used the name TAP block and established its analgesic usefulness in patients undergoing open retropubic prostatectomy [6–9] by the time the study was finished and published in 2007.

A significant proportion of pain experienced by patients undergoing abdominal surgeries is related to somatic pain signals derived from the abdominal wall [10]. The anterior abdominal wall components (skin, muscles and parietal peritoneum) are supplied by sensory neurons derived from the anterior rami of spinal nerves T6 to L1, which include the intercostal nerves (T6 to T11), the subcostal nerve (T12) and the ilioinguinal and iliohypogastric nerves (L1). These neurons traverse through the neurofascial plane between the internal oblique and the transversus abdominis muscles [11]. Transversus abdominis plane (TAP) block is aimed to access these nerves in this neurofascial plane through the lumbar triangle of Petit [2]. This triangle is bounded anteriorly by the external oblique muscle and posteriorly by the latissimus dorsi muscle, whereas the base is formed by the iliac crest [12].

TAP blocks are underutilised despite having a minimal risk of complications and a good success rate when used with contemporary procedures [13]. This could be due to a lack of resources for anesthesiologists to gain a thorough understanding of the transversus abdominis plane. Various adjuvants have been used to improve the quality and increase the duration of the local anesthetic action in different peripheral nerves and regional block techniques [13,14]. Hence in this study we give a brief history of the TAP block, define pertinent anatomy, go through current procedures, talk about efficacy of 0.25% bupivacaine alone, combination of 0.25% bupivacaine and 150mg magnesium sulfate & combination of 0.25% bupivacaine and 0.5mcg/kg dexmedetomidine in TAP block.

2. Material and methods

This prospective randomized controlled study will be conducted in the Anesthesiology Department of M.G.M Medical college and M.Y Hospital after approval of institutional research ethics committee.Convenient sampling method was used90 with patients American Society of Anesthesiologists physical status grade I–II, Age between 20-40 yrwill be randomly allocated into 3 groups with 30 patients in each group:

Group B (n=30) patient received TAP block on either side with 18 ml 0.25% bupivacaine in which 2ml normal saline added.

Group BM(n=30) patient received TAP block on either side with 18 ml 0.25% bupivacaine mixed with 1.5 ml (150mg)of mgso4 and 0.5 ml NS.

Group BD (n=30) patient received TAP block on either side with 18 ml 0.25% bupivacaine mixed with 2ml of NS in which dexmedetomidine 0.5 mcg/kg added.

Post-operative analgesia was evaluated using a VAS using a 10 point scale. All patients received preloading injections of 10–15 ml/kg of Inj. Ringer Lactate after securing their intravenous lines. Patients received 0.2 mg of glycopyrrolate intravenously and 4 mg of ondansetron intravenously 30 minutes before to surgery as premedication. Baseline measurements of the operating table's pulse, blood pressure, and oxygen saturation were taken.

Table 1. Demographic Data

Group	B Group(30)	BD Group(30)	BM Group(30)
Age (years)*	26.43±7.1	25.23±6.44	23.53±7.23
Weight (KG)*	63±5.37	61±5.24	59±5.24
Height(CM)*	162.76±5.99	164.93±4.17	161.93±3.57
Mean duration of surgery	60.50±11.47 min	58.00±7.26 min	61.33±12.66 min

3. Results

Table 1 depicts the demographic data of the study subjects The prospective, randomized study was carried out in 90 patients, scheduled for elective lower segment caesarean section inMGM Medical College , Indore .The patients were randomly allocated in three groups of 30 pa¬tients each. The patients belonging to each group re¬ceived the following drugs inTransversus Abdominis Plane Block (TAP Block) at the end of surgery.

Table 2 depicts the baseline, 2hour, 4hour, 8 hour, 12 hour, 24 hour, 36 hour and 48 hour reading of Heart Rate, Systolic Blood Pressure , Diastolic Blood Pressure, Mean arterial Pressure and spo2.

In group B, preoperative HR was 101.33±5.87 per minute whereas in group BD it was 101.4±5.9per minute and in group BM it was 104±5.9. In group B, systolic blood pressure was 119.9.00±6.7mm of Hg whereas in group BD it was 119.57 ± 6.9 mm of Hg and in group BM it was 117.60±5.4 In group B diastolic blood pressure was 76.13±5.40 mm of Hg whereas in group BD, it was 72.80±4.2mm of Hg and in group BM it was 75.3±3.7.In group B, preoperative respiratory rate was 89.3±4.9per minute whereas in group BD, it was 87.40±1.11per minute and in group BM, it was 88.80±3.3per minute.Hemodynamicallyall three groups were comparable. Heart rate, Systolic and Di¬astolic blood pressure in three groups at different time intervals from the time of performing the TAP block to 48 hours showing no significant difference p-value>0.05.

Table 3 demonstrate VAS score at rest at different time interval Significant differences were seen between the Visual Analogue Scores (VAS) in the three groups at various resting intervals from the start of the TAP block through 4, 8, 12, 24, and 48 hours. In all three groups, there was a highly significant difference in the mean VAS at 4, 8, 12, 24, and 48 hours (P-value 0.001), (Table 2). After 8 hours, there was no statistically significant difference between groups BD and BM, however B and BD and B and BM showed statistically significant differences. Table 4 depicts The mean Visual Analogue Score (VAS) at 4, 8, 12, 24, and 48 hours in all three groups likewise significantly differs from one another during the movement from the time of executing the TAP block to those times (P-value 0.001). After 8 hours, there was no statistically significant difference between groups BD and BM, although B and BD, B and BM did show a statistically significant difference.

Mean analgesic duration was 6.40-1.73 hours in Group B, 12.53-4.80 hours in Group BD, and 20.40-10.98 hours in Group BM. There is a substantial difference between the mean duration of analgesia in groups B, BD, and BM, as determined by the ANOVA test, where the p-value is 0.001 (very significant). The average amount of analgesic used was 145.00 44.24 mg tramadol in Group B, 81.67 27.80 mg tramadol in Group BD, and 66.67 33.04 mg tramadol in Group BM. The mean analgesic consumption in groups B, BD, and BM differ significantly from one another, with an ANOVA test p-value of 0.001 (very significant). No patients in either group experienced any negative outcomes.

4. Discussion

The TAP block is a quick and efficient analgesic method that is suitable for surgical operations where postoperative pain from the parietal region is a prominent factor. It offers a different analgesic approach that can be used when neuraxial blocks are contraindicated. After Rafi's first description of the technique, several studies over the past five years have emphasised the importance of the transversus abdominis plane block.

In the current study, 90 patients scheduled for caesarean section surgery were compared to see how dexmedetomidine and magnesium sulphate performed in the Transversus Abdominis Plane Block (TAPB) procedure. Three groups of thirty patients each were formed from the patients at random. With Bupi-vacaine heavy 0.5% (0.3 mg/kg), spinal anaesthesia was administered to all patients. In caesarean section surgery, when parietal wall pain is a significant source of postoperative pain, we discovered that Transversus Abdominis Plane Block (TAP Block) offers greater postoperative analgesia. In comparison to

Table 2. The mean and standard deviation of various parameter at different time intervals

		Group B (n=30)		**Group BM (n=30)**		**Group BD (n=30)**		**p-value**
		Mean	SD	Mean	SD	Mean	SD	
HR	Baseline	101.3	5.8	104	5.9	101.4	9.4	>0.05 not significant
	2 hour	92.5	4.9	81.7	8	84.5	5.1	<0.05 significant
	4 hour	89.3	5	82.5	6.8	82.1	5.7	<0.05 significant
	8 hour	88.8	4.6	82.1	5.8	81.7	5.5	<0.05 significant
	12 hour	87.5	3.6	82.3	5.4	80.9	6.7	<0.05 significant
	24 hour	86.3	4.9	82.4	5.7	81.8	5.6	<0.05 significant
	36 hour	86.1	5.5	81.5	6.6	81.3	5.4	<0.05 significant
	48 hour	96.3	5.2	81.7	5.8	82.1	4.2	<0.05 significant
SBP	Baseline	119.9	6.7	117.6	5.4	119.6	6.9	>0.05 not significant
	2 hours	118.6	7.2	115.3	4	116.2	5.6	>0.05 not significant
	4 hours	116.7	6.3	117.6	3.9	117	5.5	>0.05 not significant
	8 hours	117	6.4	116.4	4.4	116.9	5.8	>0.05 not significant
	12 hours	119.2	6.1	116.3	4.7	116.9	3.4	>0.05 not significant
	24 hours	117.4	6.2	115.6	4	116.3	4.7	>0.05 not significant
	36 hours	116.7	6.6	116.4	4.7	117.4	7.3	>0.05 not significant
	48 hours	117.8	6.4	113.5	20.3	116.7	5.5	>0.05 not significant
DBP	Baseline	76.1	5.4	75.3	3.7	72.8	4.2	<0.05 significant
	2 hour	78.5	4.3	78.1	4.6	78.8	5.1	>0.05 not significant
	4 hour	78.9	4.9	79.3	4.6	78.7	5.4	>0.05 not significant
	8 hour	79.6	3.8	79.7	4	79.2	5	>0.05 not significant
	12 hour	80.7	5.1	79.7	4.8	80	5.5	>0.05 not significant
	24 hour	117.4	6.2	115.6	4	116.3	4.7	>0.05 not significant
	36 hour	79.6	5.8	78.8	5.5	78.6	5	>0.05 not significant
	48 hour	79.3	5.1	79.9	5	78.4	6.1	>0.05 not significant
MAP	Baseline	89.3	4.9	88.8	3.3	87.4	3.7	>0.05 not significant
	2 hour	89.9	4.7	90.9	4	91.3	4.9	>0.05 not significant
	4 hour	90.1	4.5	92.3	4.2	91.5	5.1	>0.05 not significant
	8 hour	90.7	3.4	91.9	4.6	90.9	5.3	>0.05 not significant
	12 hour	92	4.6	91.9	4.8	92.6	6	>0.05 not significant
	24 hour	91	4.6	92	4	91.1	5.5	>0.05 not significant
	36 hour	91.2	4.5	91.5	4.6	91.9	5.2	>0.05 not significant
	48 hour	90.7	4.7	91.1	4.3	90.8	6.1	>0.05 not significant
SPO2	Baseline	99.27%	0.45%	99.77%	0.43%	99.83%	0.38%	<0.05 significant
	2 hour	99.70%	0.47%	99.80%	0.41%	99.73%	0.45%	>0.05 not significant
	4 hour	99.63%	0.49%	99.83%	0.38%	99.83%	0.38%	>0.05 not significant
	8 hour	99.70%	0.47%	99.80%	0.41%	99.73%	0.45%	>0.05 not significant
	12 hour	99.47%	0.51%	99.70%	0.47%	99.73%	0.45%	>0.05 not significant
	24 hour	99.70%	0.47%	99.80%	0.41%	99.73%	0.45%	>0.05 not significant
	36 hour	99.70%	0.47%	99.90%	0.31%	99.97%	0.18%	<0.05 significant
	48 hour	99.77%	0.43%	99.87%	0.35%	99.73%	0.45%	>0.05 not significant

Table 3. Mean post-operative visual analogue score(vas) at rest

	Immediate after TAPB at rest	4hr			8hr			12hr			24hr			48 hr		
		Mean	**SD**	**p-value**	**Mean**	**SD**	**p-value**	**Mean**	**SD**	**p-value**	**Mean**	**SD**	**p-value**	**Mean**	**SD**	**p-value**
B Group	0	1.80	1.21	<0.001	3.13	0.82	<0.001	2.97	0.67	<0.001	3.33	0.55	<0.001	3.23	0.82	<0.001
BD Group	0	1.57	0.63		2.07	0.25		2.73	0.58		2.73	0.58		2.63	0.56	
BM Group	0	0.87	0.73		1.33	0.80		2.40	0.67		2.60	0.67		2.50	0.51	
P-Value Between Different groups	BVs.BD	0.35			<0.001			0.14			<0.001			0.001		
	BDVs.BM	0.03			<0.001			0.04			0.42			0.35		
	BVs.BM	<0.001			<0.001			0.001			<0.001			<0.001		

Table 4. Mean post-operative visual Analogue Score(VAS) during movement

	Immediate after TAPB at rest	4hr			8hr			12hr			24hr			48 hr		
		Mean	SD	p-value	Mean	SD	p-value	Mean	SD	p-value	Mean	SD	p-value	Mean	SD	p-value
B Group	0	3.20	1.24		4.83	0.53		4.37	0.85		4.63	0.72		4.40	0.97	
BD Group	0	1.93	0.58	<0.001	3.37	0.81	<0.001	4.40	1.04	<0.001	4.30	0.79	<0.001	3.93	0.91	<0.001
BM Group	0	1.33	0.96		2.00	1.11		3.90	1.16		3.90	0.96		3.80	1.10	
P-value Between Different groups	BVs.BD	<0.001			<0.001			0.90			0.09			0.05		
	BD Vs. BM	0.005			<0.001			0.08			0.08			0.61		
	B Vs. BM	<0.001			<0.001			0.07			0.001			0.02		

0.25% bupivacaine alone, combinations of 0.25% bupivacaine and 150 mg of magnesium sulphate and 0.25% bupivacaine and 0.5 mcg/kg of dexme-detomidine prolong the duration of postoperative analgesia.

In our study **group B** mean age is 29.7± 6.188 years, in **group BM** it is 25.27 ± 3.886yearsandin **group BD** itis29.43±6.6years.In **group B** meanweight is 56.3± 3.593kgs, in **group BM** it is 55.7± 4.08 kgs and in **group BD** it is 57.17± 3.806kgs.Our study reveals that there is statistically significant (pvalue<0.005) difference in age of study groups. But there was no statistically significant difference among weight of study groups. (P=0.334)Similar study conducted by Madanngopal et al. in Delhi [15], in their study mean age of Group B is 39.17± 11.16 years, group BD1 is 38.03±10.39 years and group BD2 is36.3±9.1years.Mean weight of their group was69.83±6.63kgs for group B, 69.17± 5.46 kgs for group BD1 and 67.53± 7.15 kgs for group BD 2. In their study both the findings was statistically not significant.

Baseline: The mean heart ratein Group B was 101.3 ± 5.8 per minute, in Group BM was 104 ± 5.9 per minute and in Group BD was 101.4 ± 9.4 per minute. **At 2 hours:** The mean heart rate in Group B was 92.5 ± 4.9 per minute , in Group BM was 81.7 ± 8.0 per minute and in Group BD was 84.5 ± 5.1 per minute. The mean heart rate was **highest in Group B** and **lowest in Group BM.4 hours after surgery:** The mean heart rate in Group B was 89.3 ± 5.0 per minute ,in Group BM was 82.5 ± 6.8 per minute and in Group BD was 82.1 ± 5.7 per minute. The comparison of mean heart rate among the three groups was found to be statistically significant (P<0.005), showing a comparable mean heart rate among the three groups. **8 hours after surgery:** The mean heart ratein Group B was 88.8 ± 4.6 per minute, in Group BM was 82.1 ± 5.8 per minute and in Group BD was 81.7 ± 5.5 per minute. **12 hours after surgery:** The mean heart ratein Group B was 87.5 ± 3.6 per minute, in Group BM was 82.3 ± 5.4 per minute and in Group BD was 80.9 ± 6.7 per minute. **24 hours after surgery:** The mean heart ratein Group B was 86.3 ± 4.9 per minute, in Group BM was 82.4 ± 5.7 per minute and in Group BD was 81.8 ± 5.6 per minute. **36 hours after surgery:** The mean heart rate in Group B was 86.1 ± 5.5 per minute ,in Group BM was 81.5 ± 6.6 per minute and in Group BD was 81.3 ± 5.4 per minute. **48 hours after surgery:** The mean heart rate in Group B was 96.3 ± 5.2 per minute ,in Group BM was 81.7 ± 5.8 per minute and in Group BD was 82.1 ± 4.2 per minute. A study conducted by Talebi G. et al. [16] in the assessment of heart rate within groups, only one patient (who belonged to the H group) had bradycardia. The bradycardia happened immediately after the block and was treated with 0.7 mg atropine. The mean blood pressure was significantly lower in group H in comparison with groups L and M at 4 and 12 hours postoperatively (P < 0.001).

The mean VAS scalein Group B was 5.3± 0.9 per minute, in Group BM was 5.1 ± 1.0 per minute and in Group BD was 5.2 ± 0.9 per minute. **At 2 hours:** The mean VAS scalein Group B was 0.7± 0.7 per minute, in Group BM was 0.3 ± 0.5 per minute and in Group BD was 0.6 ± 0.5per minute. **4 hours after surgery:** The mean VAS scalein Group B was 0.6 ± 0.7 per minute, in Group BM was 0.5 ± 0.5 per minute and in Group BD was 0.7 ± 0.7per minute. **8 hours after surgery:** The mean VAS scalein Group B was 1.7 ± 1.0 per minute, in Group BM was 0.5 ± 0.5 per minute and in Group BD was 1.0 ± 0.5 per minute.**12 hours after surgery:** The mean VAS scalein Group B was 5.0 ± 0.8 per minute, in Group BM was 1.7 ± 0.7 per minute and in Group BD was 1.9 ± 0.8 per minute. **24 hours after surgery:** The mean VAS scalein Group B was 6.4 ± 0.5 per minute, in Group BM was 2.0 ± 0.6 per minute and in Group BD was 5.4 ± 0.5 per minute. **36 hours after surgery:** The mean VAS scalein Group B was 7.7 ± 0.5 per minute, in Group BM was 5.3 ± 0.5 per minute and in Group BD was 6.5 ± 0.7 per minute. **48 hours after surgery:** The mean VAS scale in Group B was 8.4 ± 0.5 per minute, in Group BM was 6.5 ± 0.5 per minute and in Group BD was 7.3 ± 0.5 per minute. The comparison of mean VAS scale among groups at 8,12 24,36 qand 48 hour was found to be statistically significant (P<0.005).Similar study conducted by ParasaMrunalini et al. [17] found that mean total pain score in 24 hours is 62.63± 6.65 in control group and 48.07± 6.76 in TAP block group.A study conducted by Niraj et al. [18], there was no significant difference in the VAS scores on coughing between the two groups (p = 0.60) and the difference did not vary over time. There was no significant difference in the VAS scores at rest between the two groups (p = 0.46) and the difference did

not vary over time.Similar study conducted by James et al. found no significant difference in the proportion of patients receiving placebo or the intervention with poorly controlled pain either at rest or with coughing at 2 hours. There was no significant difference in postoperative morphine consumption between the placebo and treatment groups at 2 hours or at 24 hours.A study conducted by Talebi et al. [16]found Significant differences were seen in pain VAS score among the three groups. It was lower in the M and H groups than the L group at 2, 4, and 8 hours postoperatively, at both rest and cough states.

4.1. Comparison of mean duration of analgesia in study groups

The mean duration of analgesiain Group B was 511.20 ± 29.43 minutes, in Group BM was 1321.60 ± 80.62 min and in Group BD was 654.90 ± 36.93 minutes . The comparison of mean duration of analgesia among the three groups was found to be statistically significant (P=0.001), showing a significantly varying mean duration of sensory block among the three groups. The mean duration of analgesia maximum in group BM followed by BD and group B.

A study conducted by Talebi et al. found patients in groups M and H had a higher modified Ramsay score and sedation duration in comparison with group L at 0, 2, and 4 hours postoperatively. (Statistically significant).

4.2. Comparison of study groups according to number of rescue analgesia

In group B, none had received one rescue analgesia, 14 had receive two and 16 had received three rescue analgesia In group BM, 17 had receive one rescue analgesia, 13 had receive two and none had received three rescue analgesia.In group BD, 11 had receive one rescue analgesia, 19 had receive two and none had received three rescue analgesia.There was a statistically significant association between rescue analgesia and the groups (P=0.00).

Similar study conducted by Parasamrunalini et al. [17]found that both the groups showed a statistically significant difference in the mean total tramadol consumption in the first 24 hours postoperatively, which was 439 ± 68.59 mg in the control group and 281.33 ± 69.66 mg in the TAP block group, with a P value of 0.0001.

4.3. Comparison of mean onset time of analgesia in study groups

The mean onset of analgesia in Group B was 6.20 ± 1.08 minutes , in Group BM was 3.60 ± 0.53 min and in Group BD was 4.98 ± 0.97 minutes. The comparison of mean onset time of analgesia among the three groups was found to be statistically significant (P=0.001).

4.4. Comparison of study groups according to Satisfaction level

The comparison according to patient satisfaction level.In Group B, 23 patients were satisfied, 6 patients were very satisfied and 1 was neutral. In Group BM, 22 patients were very satisfied and 08 were satisfied.In Group BD, 16 patients were satisfied, 15 (50%) and14 were very satisfied.There was statistically significant association between patient satisfaction and the groups (P=0.001), showing the groups are independent of the patient satisfaction.

Similar study conducted by James et al. in 2011, there were no significant differences observed between the groups in terms of opioid side effects or patient satisfaction at either 2 hours or 24 hours. There were no adverse events attributable to the TAP injections in either group. A study conducted by Talebi et al. [16] found Patient satisfaction score was significantly higher in groups M and H compared with group L; however, there was no difference between groups M and H in this instance.

5. Conclusion

TAP Block gives greater postoperative analgesia for caesarean section patients with parietal wall pain. Combinations of 0.25% bupivacaine with 150mg magnesium sulphate and 0.5mcg/kg dexme-detomidine give prolonged postoperative analgesia. 0.25% bupivacaine and 150mg magnesium sulphate provide the longest analgesia. 0.25% bupivacaine and magnesium sulphate 150 mg can be a desirable combination for TAP block due to safety, opioid sparing effect, reduced anti-emetic use, prolonged postoperative analgesia, and patient

satisfaction. Thus, TAP block produced greater analgesia up to 48 hours and reduced the need for opioid analgesic following LSCS under spinal anaesthesia.

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