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Comparison of Dexmedetomidine and Fentanyl as Adjuvants to Hyperbaric Bupivacaine 0.5% in Gynaecological Surgery.

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Abstract

Background: Regional anesthesia is the preferred technique for most of lower abdominal and lower limb surgeries as it allows the patient to remain awake and minimizes or completely avoids the problem associated with airway management. Hyperbaric bupivacaine 0.5% is extensively used for spinal anesthesia. Fentanyl is a synthetic lipophilic opioid commonly used for postoperative analgesia.

Aim: The aim of the study is to compare the following factors in two groups i.e. Hyperbaric bupivacaine 0.5% and 5 mcg Dexmedetomidine and Hyperbaric bupivacaine 0.5% and 25 mcg Fentanyl when given intrathecally.

Materials and Methods: This randomized controlled trial was designed to evaluate the onset and duration of sensory and motor block as well as operative analgesia and adverse effects of Dexmedetomidine vs Fentanyl given intrathecally with heavy 0.5% Bupivacaine for spinal anesthesia in patients scheduled for Total Abdominal hysterectomy patients receiving 5 mcg of Dexmedetomidine and 25 mcg of Fentanyl with 3 ml of Bupivacaine intrathecally.

Results: The addition of Dexmedetomidine significantly prolonged the duration of sensory and motor block, significantly prolonged the time for demand analgesia and had no effect on the onset of sensory or motor block when compared with fentanyl. The incidence of side effects was limited to the occurrence of Hypotension, Bradycardia, vomiting in the groups that received Dexmedetomidine intrathecally. The incidence of pruritus were more in the groups that received fentanyl intrathecally. The addition of Dexmedetomidine intrathecally had similar effect on sedation when compared to fentanyl.

Keywords: Dexmedetomidine; Hyperbaric bupivacaine; Fentanyl; intrathecally.

Introduction

Regional anesthesia is a safe, effective and economical technique for pain relief with an added advantage of extension of long post-operative analgesia. Lower limb surgeries may be performed under local, regional (spinal or epidural) or general anesthesia, spinal block is still a first choice, because of its rapid onset, high quality of blockade, lack of catheter related infection, less failure rate and also cost effective, but the duration of block and postoperative analgesia is limited.

In recent years, usage of intrathecal adjuvants[1] has gained much popularity with the benefit of prolonging the duration of blockade, better success

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rate, patient satisfaction, decreased resource utilization compared with general anesthesia and faster recovery. Adequate pain management accelerates functional recovery, facilitates rehabilitation and enables the patients to quick return to their normal activity. The quality of the spinal anesthesia has been reported to be improved by the addition of opioids and other drugs [such as vasoconstrictors, clonidine, neostigmine, ketamine and midazolam. Intrathecal dexmedetomidine is associated with prolonged motor and sensory block, hemodynamic stability, and reduced demand for rescue analgesics in 24h as compared to fentanyl.[2] Therefore, the present study performed to compare Fentanyl and Dexmedetomidine in their efficacy as adjuvants to sub arachnoid block.

Material and Methods

Patients who fulfil the inclusion criteria and undergo elective surgery in Sultan Bazar Maternity Hospital, Koti, Hyderabad and Modern Government Maternity Hospital, Petlaburz, Hyderabad.

Inclusion criteria

Patients aged between 30–60 years belonging to ASA class I & II without any co-morbid disease, admitted for elective TAH.

Exclusion criteria

Patients with co-morbid conditions, Allergy to local Anesthetics, Patients belonging to ASA class III, IV and V posted for emergency surgeries. Patients having absolute contraindication for spinal anesthesia like raised intracranial pressure, severe hypovolaemia, bleeding diathesis and local infection.

After approval from the ethical committee of our Hospital, 100 ASA I and II patients scheduled for total abdominal hysterectomy surgeries under spinal anesthesia were chosen for the study. Pre-anesthetic check up was done one day prior to the surgery. Patients were evaluated for any systemic diseases and laboratory investigations recorded. The procedure of SAB was explained to the patients and written consent was obtained. The patients were educated about the use of visual analogue scale.

Preparation of patients included period of overnight fasting. Patients were premedicated with Tab. Rantac 150 mg and Tab. Alprazolam 0.5 mg H.S. Boyles anesthesia machine was checked. Appropriate size endotracheal tubes, working laryngoscope with medium and large size blades, stylet and working suction apparatus were kept ready before the procedure. Emergency drug tray consisting of atropine, adrenaline, mephenteramine, ephedrine, dopamine were kept ready.

Procedure

Patients shifted to OR table, base vitals were recorded. IV access was obtained on the forearm with No 18G IV cannula and all patients were preloaded with 15 ml/Kg, Ringer's Lactate, 15 mins before the surgery. Patients were randomly allocated into groups. Under strict asepsis, using 23 G Quincke spinal needle, lumbar puncture was performed at L3-L4 space.

Group D received 3 ml, 0.5% hyperbaric bupivacaine+5 mcg Dexmedetomidine (0.1 ml)+0.4 ml Normal Saline (Total vol 0.5 ml).

Group F received 3 ml, 0.5% hyperbaricbupivacaine+25 mcg Fentanyl (Total vol 0.5 ml).

Intraoperatively pulse rate, non-invasive blood pressure, electrocardiogram, SpO_2 was recorded, every 2 minutes for the first 10 minutes, every 10 minutes for the next 50 minutes and every 15 minutes till the end of surgery.

Time of onset of T10 sensory block and peak sensory block was noted using pin prick method, time of onset of bromage 3 motor block was noted.

Motor block was assessed with Modified Bromage scale Bromage 0 - the patient is able to move the hip, knee and ankle Bromage 1 - the patient is unable to move the hip but is able to move the knee and ankle Bromage 2 - the patie nt is unable to move the hip and knee but able to move the ankle Bromage 3 - the patient is unable to move the hip, knee and ankle.

Modified Ramsay sedation scale was used for intraoperative sedation 1 = agitated, restless 2 = cooperative, tranquil 3 = responds to verbal commands while sleeping, 4 = brisk response to glabellar tap or loud noise while sleeping 5 = sluggish response to glabellar tap or loud noise while sleeping 6 = no response to glabellar tap or loud noise while sleeping.

Hypotension (>20% fall of baseline blood pressure) was treated with bolus dose of 6 mg Mephentermine i.v. Bradycardia (pulse rate <50 bpm), was treated with 0.6 mg atropine i.v. Incidence of respiratory depression defined as respiratory rate less than 9/min and SpO_2 less than 90% on room air, was noted. Side effects if any were noted. Post operatively regression of the sensory block and the motor blockade to reach modified

Bromage 0 was noted Pain was assessed using "Visual Analogue Scale" advocated by Revill and Robinson in 1976. It is linear scale, consists of 10 cm line anchored at one end Visual analogue scale by a label such as "No pain" and other end by "Worst pain imaginable". Patient simply marks the line to indicate the pain intensity. Supplemental analgesia was given for visual analogue score of more than 6. Time of supplemental analgesia was noted.

Visual analogue scale was used to assess post-operative pain. 0 = no pain, 10 = severe pain.

Statistical Methods: Descriptive statistical has been carried out in the present study. Results on continuous measurements are presented on Mean±SD (Min-Max) and results on categorical measurements are presented in Number (%). Significance is assessed at 5% level of significance. Student t test (two tailed, independent) has been used to find the significance of study parameters on continuous scale between two groups (Inter group analysis) on metric parameters. Chi-square/Fisher Exact test has been used to find the significance of study parameters on categorical scale between two or more groups.

A Comparative two group randomized clinical study with 100 patients with 50 patients in Group F (Fentanyl) and 50 patients in Group D (Dexmedetomidine) is undertaken to study the changes in hemodynamics and side effects. Statistical analysis was done by applying Chi-square test, Anova test and students 't' test to analyse the data, p value was determined. P >0.05 is not significant P <0.05 is significant P <0.001 is highly significant.

Results

ASA Grading in both groups: Both groups were similar in respect of ASA grade. [p >0.05] which is not statistically significant.

Table 1: Demographic distribution in present study

Parameters	Group D	Group F	'P' Value
Age [years]			
Mean	50.08	51.64	0.314
S.D	6.26	6.60	
Height [cm]			
Mean	156.1	157.5	0.261
S.D	5.83	6.54	
Weight [kg]			
Mean	58.94	61.72	0.100
S.D	8.82	7.91	

Demographic data: The two groups were comparable with respect to their age, height and weight. There was no statistically significant difference among two groups in demographic aspects.

Shows distribution of pulse rate at various intervals between two groups and p value is statistically significant at 5 min, 10 min, 15 min, 20 min, 30 min, 75 min and 90 min (Fig. 1).

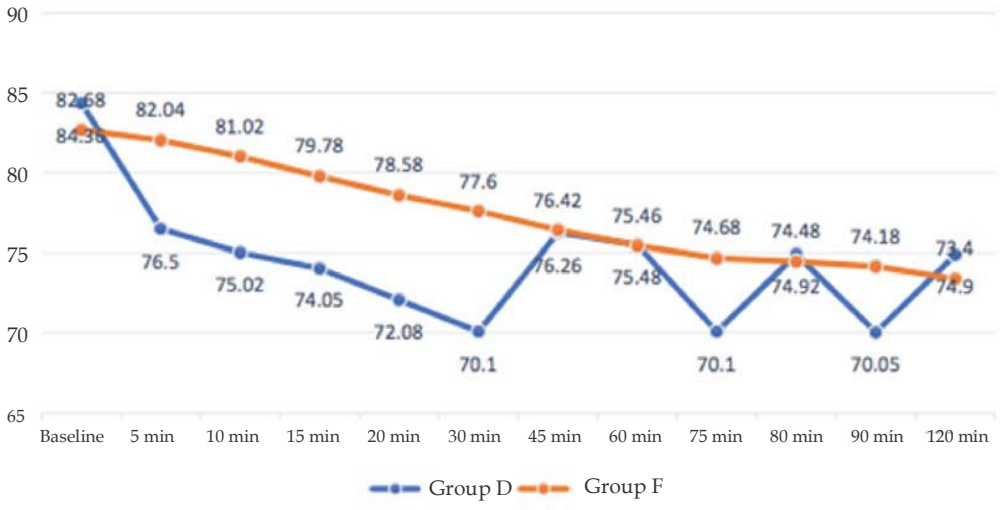

Fig. 1: Comparison of heart rate between two groups at various intervals

Shows the distribution of SBP at various interval between the two groups and p value is statistically significant at 5 min, 10 min, 15 min, 20 min, 45 min and 120 min (Fig. 2).

Shows the distribution of DBP at various interval between the two groups and p value is statistically significant and at 5 min, 10 min, 15 min, 20 min, 30 min, 75 min and 90 (Fig. 3).

Table 2: Sensory and motor block in mins by groups

	Group D	Group F	'P' Value
Onset of sensory block [T10]			
Mean	2.62	2.79	0.146
S.D	0.56	0.59	
Time to reach t6 in mins			
Mean	11.72	11.47	0.314
S.D	1.23	1.23	
Onset to Bromage 3 (min)			
Mean	10.59	10.38	0.31
S.D	1.00	1.08	
Time for 2 segment regression of sensory block from the highest sensory level (min)			
Mean	125.18	89.3	< 0.0001
S.D	4.29	5.44	
Regression of motor blockade to bromage 0 (min) by groups			
Mean	361.79	178.46	<0.0001
S.D	6.95	7.59	

Fig. 2: Comparison of systolic blood pressure between two groups at various intervals.

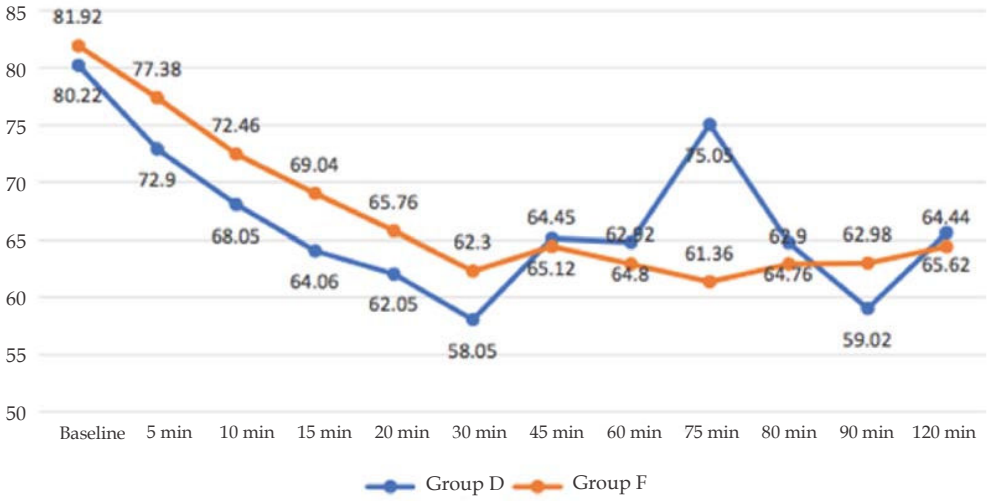

Fig. 3: Comparison of Diastolic blood pressure between two groups at various intervals

Sensory level of T10 was statistically no significant difference among two groups. Peak sensory level of T6 was no statistically significant difference among two groups. Time taken to achieve Bromage 3 from the time of SAB was statistically no significant difference among two groups.

The mean duration of return of motor block to Bromage scale zero [0] was in Group D 361.79±6.95 min and in Group F was 178.46±7.59 min. There was statistically significant difference among two groups in the mean duration of motor block p <0.05.

Table 3: Distribution of duration of analgesia (min) by groups

	Group D	Group F	'P' Value
Duration of analgesia (mins)			
Mean	246.00	165.84	<0.0001
S.D	5.03	2.33	
Time to reach highest sensory level by			
Mean	12.36	12.16	0.455
S.D	1.48	1.16	

The mean time for demand analgesia [defined as the time at which patient demands some mode of pain relief] was 246.00±5.03 min in Group D and was 165.84±2.33 min in Group F. There was statistically significant difference among two groups in the duration of time for demand analgesia p <0.05.

The highest level of sensory block was T4-T6 in both groups. The median of the onset of sensory block was T6 in both groups. T4 was 32% in Group F and 36% in Group D. T6 was 50% in Group F and 54% in Group D which was statistically not significant, p value >0.05.

Table 4: Distribution of cases by groups and side effects

Side Effects	Group D		Group F	
	No	%	No	%
Hypotension	11	22%	7	14%
Bradycardia	5	10%	2	4%
Pruritus	0	0%	3	6%
Vomiting	1	2%	1	2%
Rescue Analgesia	4	8%	6	12%

The incidence of Hypotension in Group D was 22% and in Group F was 14% which was statistically not significant p >0.05.

The incidence of Bradycardia in group D was 10% and in Group F was 4% and there was no statistically significant difference in both groups p >0.05.

The incidence of pruritus in Group D was zero and in Group F was 6%. p <0.05 which was statistically significant.

The incidence of vomiting in Group D was 2% & Group F was 2% which was statistically not significant p = 1.

Table 5: Distribution of cases by sedation score

Ramsay Score	Group	Mean	SD	P-Value
30 min	D	2.0000	0.00000	–
	F	2.0000	0.00000	
60 mins	D	2.0000	0.00000	–
	F	2.0000	0.00000	
90 mins	D	3.4000	0.49487	<0.001
	F	2.1600	0.37033	
120 mins	D	2.0000	0.00000	0.006
	F	2.1400	0.35051	
150 mins	D	2.0000	0.00000	–
	F	2.0000	0.00000	
180 mins	D	2.0000	0.00000	–
	F	2.0000	0.00000	

The incidence of sedation score 2 was 100% in both the groups at the end of 60 min, 150 min and 180 min and was statistically not significant p >0.05.

Table 6: Distribution of cases by VAS

VAS	Group	Mean	SD	P value
6 hr	D	0.0000	0.00000	<0.001
	F	3.5000	0.50508	
12 hr	D	3.5000	0.50508	<0.001
	F	5.9000	0.97416	
18 hr	D	5.5200	0.50467	<0.001
	F	7.2800	0.94847	
24 hr	D	3.6200	0.69664	<0.001
	F	7.2400	0.95959	

There was statistical difference between VAS score of both groups at the end of 6 hr, 12 hr, 18 hr, 24 hr. p value < 0.05

Discussion

Subarachnoid Block is a commonly used Anesthetic technique for lower abdominal surgeries. There has been a growing interest in the use of analgesic additives to spinal local Anesthetics. Alpha-2 agonist like Dexmedetomidine have been shown to prolong the duration of both sensory and motor blockade and to provide extended postoperative analgesia. In this study 5 mcg of Dexmedetomidine was added to 15 mg [3 ml] of 0.5% Hyperbaric Bupivacaine or 25 mcg of fentanyl added to 15mg [3 ml] of 0.5% Hyperbaric Bupivacaine and its efficacy as an adjuvant to subarachnoid Bupivacaine was studied in 100 patients undergoing elective Total Abdominal Hysterectomy.

The mean time to onset of sensory Block (T10 level) was 2.62±0.56 mins in Group D and 2.795 ±0.59 mins in Group F. In our study the addition of 5mcg of Dexmedetomidine to Hyperbaric Bupivacaine did not shorten the onset of sensory block [T10 level] when compared to the addition of 25 mcg of fentanyl to Hyperbaric Bupivacaine. The onset of sensory block [T10 level] was similar in both groups.

This correlated with the study Gupta et al.[3]who compared the effect of 5 mcg Dexmedetomidine and fentanyl 25 mcg on the onset and duration of sensory and motor block when added to 12.5 mg of Bupivacaine for lower abdominal surgeries and found no statistically significant difference between the two groups. Subhi M Al-Ghanem et al.[4] who compared the effect of 5 mcg Dexmedetomidine Vs fentanyl 25 mcg in intra operative analgesia and the duration of sensory & motor block when added to 10mg intrathecal plain Bupivacaine and observed that there is no statistically significant difference between the two groups as regards to the onset time of sensory block at T10 level.

Ibrahim F.A. Khalifa et al.[5]did a comparative study of adding intrathecal 5 mcg Dexmedetomidine and 5 mcg of sufentanil to 10 mg of heavy Bupivacaine found that there is no statistically significant difference in the onset of sensory block T10 level Group D = 5.5±3.7, where Group 57 = 6.2±1.3 p <0.69.

The median of the upper limit block was T6 in Group D and Group F. There was no statistically significant difference among the two groups in the maximum level of sensory Block. The addition of Dexmedetomidine to hyperbaric Bupivacaine did not increase the speed of sensory level when compared with 25 mcg of fentanyl to hyperbaric Bupivacaine.

Kanazi et al.[6] found that there is statistically no significant difference for the maximal sensory Block for 12 mg Bupivacaine 0.5% alone or combined 3 mcg of Dexmedetomidine or 30 mcg of clonidine [p = 0.3]. Mahmoud M. Al Mustafa et al.[4] found that addition of intrathecal Dexmedetomidine in increasing doses 5 mcg, 10 mcg of Dexmedetomidine with 12.5 mg of Spinal Bupivacaine increased the level of sensory block as the dose of Dexmedetomidine increases. Ibrahim F.A. Khalifa et al.[7]found that there is statistically no significant difference for the maximal sensory block when compared with 5 mcg of Dexmedetomidine and 5 mcg of sufentanil to 10 mg of heavy Bupivacaine.

The mean time to reach T6 level was 11.72±1.23 mins in Group D and 11.47±1.23 min in Group F. There is no statistically significant difference among the two groups. Subhi M. Al Ghanem et al.[8] who found that addition of 5 mcg of Dexmedetomidine and 25 mcg of fentanyl with 10 mg of isobaric Bupivacaine intrathecally had significant difference on the mean time to reach peak sensory level 19.34±2.87 in Group D and 18.39±2.46 in Group F (p = 0.12). Gupta et al.[2] also found that there was no difference between groups F and D in the time to reach peak sensory level of T6.

The mean time to achieve Bromage 3 score was 10.59±1.00 min in Group D and 10.38±1.08 min in Group F. The addition of 25 mcg fentanyl or 5 mcg Dexmedetomidine to 15 mg of Bupivacaine have no effect on the onset of motor block. Gupta et al.[3] who found that that there was no difference in the onset time to bromage 3 motor block. 11.2±1.3 in Group F and 11.6±1.8 in Group D. Ibrahim F. A. Khalifa et al.[7] found that there is statistically no significant difference with 5 mcg of Dexmedetomidine and 5 mcg of sufentanil to 10 mg of heavy Bupivacaine on the mean time to achieve bromage 3 score.

In our study the duration of analgesia was 246.00 ±5.03 min in Group D and 165.84±2.33 min in Group F. The addition of 5 mcg of Dexmedetomidine to Hyperbaric Bupivacaine significantly prolonged the duration of sensory block. Gupta et al.[3], who found that duration of analgesia was significantly longer in Group D as compared to Group F. Khan et al.[9], found a significant difference between two groups with respect to duration of sensory block. Group F 77.50 and Group D 129.50 Subhi M. Al-Ghanem et al.[8], found that the addition of 5 mcg of Dexmedetomidine to 10mg of isobaric Bupivacaine 274.83±73.4 significantly prolong the duration of sensory blockade while 25 mcg of fentanyl to 10 mg of isobaric Bupivacaine was 179.5±47.4. There was statistically significant difference among the two groups p <0.001. Kanazi et al.[6], found that the addition of 3 mcg of Dexmedetomidine to 12 mg of intrathecal Bupivacaine or 30 mcg of clonidine significantly prolonged the sensory block. Al Mustafa MM et al.[10] studied that there is a significant difference in the duration of sensory block among three groups who received spinal Bupivacaine 12.5 mg alone or combined with 5 mcg of Dexmedetomidine or with 10mcg of Dexmedetomidine. He concluded that Dexmedetomidine has a dose dependent effect on the onset and regression of sensory and motor block when used in Subarachnoid Block.

In our study the mean duration of motor block was 361.79±6.95 min in Group D and 178.46±7.59 min in Group F. Gupta et al.[3] found the regression of motor block to Bromage 0 was significantly slower with addition of Dexmedetomidine i.e. 149.3±18.2 in Group F and 421±21.0 in Group D.

Khan et al.[9] found that regression of motor block to Bromage 1 was significantly prolonged with Dexmedetomidine i.e. 187.0±6.87 in Group F and 377.25±11.32 in Group D.

Subhi M. Al-Ghanem et al.[8] found in their study that 5 mcg of Dexmedetomidine to 0.5% hyperbaric Bupivacaine prolonged effect of motor blockade that 25 mcg of fentanyl to 0.5% hyperbaric Bupivacaine intrathecally.

Kanazi et al.[8] observed that addition of 12 mg of Bupivacaine supplemented with dexmedetomidine and 12 mg of Bupivacaine with 30 mcg of clonidine intrathecally produces similar prolongation in the duration of motor block when compared 12 mg of Bupivacaine alone. [The prolongation of motor block produced by subarachnoid Hyperbaric Bupivacaine combined with 5 mcg of Dexmedetomidine results from binding these agonist to motor neurons in the dorsal horn of the spinal cord].

Mahmoud M. Al Mustafa et al.[10] found that Dexmedetomidine has a dose dependent effect on the duration of motor blockade when added to Bupivacaine. Ibrahim F.A Khalifa et al.[40] found that the addition of 5 mcg of Dexmedetomidine to 2 ml of heavy Bupivacaine and 5 mcg of sufentanil to 2 ml of heavy bupivacaine produces a significant difference in the duration of motor blockade.

In our study the mean Time to two segment regression was 125.18±4.29 in Group D and 89.3±5.44 min in Group F. The addition of 5 mcg of Dexmedetomidine to 0.5% Bupivacaine significantly prolonged the time to two segment regression. Gupta et al.[3] found that time to two segment regression was significantly slower with addition of intrathecal Dexmedetomidine as compared with Fentanyl i.e. 76±20.3 min in Group F and 120±22.2 min in Group D. Khan et al.[9] found that time to two segment regression was significantly slower in Group D as compared to Group F i.e. 77.50±7.42 in Group F and 129.50±9.07 in Group D.

In our study HR, SBP and DBP at all the above intervals were lower in group D than Group F. Difference of HR was statistically significant at all the above intervals except at before dural puncture, 45 min, 80 min, and 120 min after dural puncture. Difference of SBP was statistically significant at all the above intervals except at baseline, 30 min, 75 min, 80 min and 90 min after dural puncture. DBP did not show a statistically significant difference at baseline and 45 min, 80 min, 120 min after dural puncture. Khan et al.[9] who found that Heart rate to be lower in Group D than Group F except at before dural puncture, 35 min, 40 min, 120 min after dural puncture. SBP lower in Group D than Group F except at baseline, just after dural puncture and 5 min after dural puncture. DBP was lower in Group D than Group F except baseline, after dural puncture, 5 min, and 70 min after dural puncture.

In our study the incidence of Hypotension was 22% in Group D and 14% in Group F. Hypotension was mild to moderate in both groups which was not statistically significant ($p > 0.05$). Gupta et al.[3], found that Hypotension was more in Group D than Group F. But it was not statistically significant. Khan et al.[9] found that incidence of Hypotension was more in Group D than Group F. But this was not statistically significant. Kanazi et al.[6] studied that the addition of Dexmedetomidine or clonidine to Bupivacaine did not cause a significant decrease in the Blood pressure intraoperatively or postoperatively. Intrathecal local Anesthetics block the sympathetic outflow and reduce the blood pressure. The sympathetic block is usually near-maximal with the doses used for spinal anesthesia. The addition of a low dose of α2 agonist to a high dose of local Anesthetics does not further affect the near maximal sympatholysis.

Ibrahim FA Khalifa et al.[7] found that the addition of 5 mcg of Dexmedetomidine to spinal Bupivacaine and 5 mcg of sufentanil to spinal Bupivacaine did not produce a significant difference in the incidence of hypotension. Subhi M. Al-Ghanem et al.[8] found that hypotension was more in fentanyl group than in the Dexmedetomidine group but it did not reach a significant difference. Meanwhile, hypotension occurred 25-30 minutes after spinal injection in 2 patients in the Dexmedetomidine group and one patient in fentanyl group had mild episodes of Hypotension in PACU.

The incidence of bradycardia was 4% in Group F and 10% in Group D [$p < 0.301$]. There is no statistically significant difference among two groups. Khan et al.[9] found that bradycardia was higher in Dexmedetomidine group as compared to fentanyl group, yet the difference was not statistically significant. Ibrahim F.A. Khalifa et al.[40] found that there is statistically no significantly difference in the incidence of Bradycardia in both the groups with 5 mcg of sufentanil to 10 mg of 0.5% Bupivacaine and 5 mcg of Dexmedetomidine

to 10 mg of 0.5% Bupivacaine. Subhi M Al-Ghanem et al.[8] found that there is statistically no significant difference in the incidence of Bradycardia among two groups of 5 mcg of Dexmedetomidine to 10 mg of isobaric Bupivacaine and 25 mcg of fentanyl to 10mg of isobaric Bupivacaine intrathecally.

The incidence of pruritus was 0% in Group D and 6% in Group F. There is statistically significant difference among two groups. Ibrahim F.A. Khalifa et al.[7] found that there is significant difference in the incidence of pruritus in the sufentanil group. Subhi M. Al. Ghanem et al.[8] found that there is statistically significant difference in the incidence of pruritus. Pruritus after intrathecal fentanyl is reported to be 40-70% but if was only 13% in present study which can be explained by the fact that pruritus is a benign subjective symptom which is under reporting and usually needs to treatment. Bogra J. Srivastava P et al.[5] found there is statistically significant difference in the incidence of pruritus with 10 mg of fentanyl, 12.5 mg of fentanyl, added to hyperbaric Bupivacaine.

The incidence of vomiting was not statistically significant in both the groups. This correlated with the study Kanazi et al.[6] found that intrathecally administrated α2 agonist have a dose-dependent sedative effect. The doses of clonidine and dexmedetomidine selected in their study were at the lower end of the dosing spectrum. This explains the lack of sedative effects between the study groups B and C and the intraoperative anxiety one patient in Group D.

Conclusion

Intrathecal Dexmedetomidine supplementation of spinal block seems to be a good alternative to intrathecal Fentanyl since it produces prolonged sensory block and motor block. It is evident that this type of block may be more suitable for lower abdomen and lower extremities surgeries.

A drawback of Dexmedetomidine supplemented spinal block characteristics is the increase in the duration of motor block which may not suit short term surgical procedures or ambulatory surgery.

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