EFFICACY OF PREMIXED VERSUS SUCCEDENT ADMINISTRATION OF FENTANYL AND BUPIVACAINE IN SUBARACHNOID BLOCK FOR LOWER LIMB SURGERIES

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BACKGROUND & AIMS

• Opioids and non-opioids adjuvants are added to bupivacaine to increase the duration , provide stable haemodynamics and prolonged post operative analgesia

• Mixing opioids and hyperbaric bupivacaine in a single syringe may alter the density of hyperbaric solution, affecting the spread in intrathecal space

• Alterations in the baricity of a solution to the extent of 0.0006 g/ml can alter the spread of local anaesthesia in CSF

To assess the efficacy of premixed versus succedent administration of fentanyl and hyperbaric bupivacaine in subarachnoid block for lower limb surgeries in terms of-

❖ Time taken to reach T₁₀ sensory level and modified bromage score 3,(duration of sensory and motor block)

❖ Incidence of hypotension

❖ Patient and surgeon satisfaction score

MATERIAL & METHODS

❑ Group A(n=40) patients received premixed 0.5% hyperbaric bupivacaine 2.5ml (12.5 mg) and 0.5ml (25mcg) of fentanyl in a single 3.0ml syringe

❑ Group B(n=40) – patients first received 0.5ml (25mcg) of fentanyl in a 3.0ml syringe followed by 0.5% hyperbaric bupivacaine 2.5ml (12.5mg) in a 3.0ml syringe

❑ Group C(n=40) received 0.5 % hyperbaric bupivacaine 2.5 ml (12.5 mg) in a 3ml syringe followed by 0.5 ml (25 mcg) of fentanyl in a 3 ml syringe

RESULTS

- The mean time for onset of sensory and motor block was least in group C followed by group B as compared to maximum time required in group A which was statistically significant
- The duration of sensory and motor block was statistically prolonged in groups B and C as compared to group A (maximally in group C)
- Patients in group A experienced more hypotension as compared to groups B and C
- More number of patients reported side effects in group A but was not significant as compared to group B and C
- Patients in both the groups had either perfect or good block as graded by the surgeons and either excellent or good or fair as graded by the patients
- Time to first rescue analgesia was earliest in group A as compared to groups B and C, which was found to be statistically significant
- Mean total rescue analgesic consumption was comparable in all three groups

Table 1

Distribution of subjects according to time taken to obtain T10 sensory level and modified Bromage score 3(min)

	GROUP A		GROUP B		GROUP C		F	p-value	A VS B	A VS C	B VS C
	Mean	SD	Mean	SD	Mean	SD			p-value	p-value	p-value
Sensory Onset (T ₁₀) (mins)	6.30	1.47	4.65	1.27	2.93	1.10	68.610	<0.001	<0.001	<0.001	<0.001
Motor Onset (mins)	7.25	1.55	5.43	1.26	3.65	1.10	74.931	<0.001	<0.001	<0.001	<0.001

Trends in highest sensory level attained

Table-2 TRENDS IN REGRESSION OF BLOCK

Trends in Regression of block

	GROUP A		GROUP B		GROUP C		F	p-value	A VS B	A VS C	B VS C
	Mean	SD	Mean	SD	Mean	SD			p-value	p-value	p-value
Two segment regression of sensory level (mins)	85.50	11.54	92.75	11.32	93.50	10.01	6.480	0.002	0.004	0.001	0.760
Regression of modified bromage score to 0 (mins)	119.25	8.29	133.25	13.85	138.50	13.69	26.534	0.000	0.000	0.000	0.057

Table 3 INCIDENCE OF HYPOTENSION

Hypotension	GROUP A	GROUP B	GROUP C	P value
	N	N	N	
	25	4	7	

CONCLUSION

• Administering hyperbaric bupivacaine first followed by fentanyl (i.e. succedent) leads to an early onset and prolonged duration of sensory and motor block. Incidence of hypotension was seen to be significantly less in sequential groups as compared to premixed group,