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EFFICACY OF EPIDURAL TRAMADOL AS ADJUVANT TO BUPIVACAINE TO REDUCE POST- ANESTHESIA SHIVERING: COMPARISON WITH INTRAVENOUS TRAMADOL HCL IN ELECTIVE CAESARIAN SECTION

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Abstract:
Objective: *Central neuraxial blocks have been pillar for elective caesarian segments. Epidural anesthesia is better endured hemodynamically and gives titer capable absence of pain and delayed span of absence of pain. Shivering in perioperative period is accounted for as high as 65% when all is said in done anesthesia and 33% in focal neuraxial anesthesia. Intravenous tramadol has been utilized for quite a long time to treat perioperative shivering. Epidural tramadol as adjuvant to neighborhood anesthesia expands quality and length of anesthesia. We intended to note viability of epidural tramadol.*
Study Design: *Prospective, Randomized Control Trial study.*
Place and Duration of Study: *This investigation was directed at the Operation theaters of Khyber Teaching Hospital Peshawar*
Materials and Methods: *Total number of 250 patients remembered for concentrate arbitrarily partitioned in gathering 1 and 2, gotten epidural and intravenous tramadol successively. SPSS programming was utilized to examine measurements.*
Results: *Group 1 brought about 7 patients with shivering interim to shivering was 41.42+7.29 minutes and mean APGAR was 7.56+1.14,9.83+0.41,9.99+0.08 at 1,5 and 10 minutes successively. Gathering 2 brought about 6 patients with shivering interim to shivering was 43.66+4.27 minutes and mean APGAR was 8.48+0.85, 9.78+0.62,9.97+0.15 at 1,5 and 10 minutes successively. Shivering and time to shivering between 2 groups were irrelevant with centrality level of p=0.777 and p=0.524 continuously. APGAR at 1 moment was critical with level of p< 0.001 while at 5 and 10 minutes improved and got unimportant with p=0.478 and p=0.315 levels successively. Queasiness spewing was unimportant between 2 groups p=0.856.*
Conclusion: *Epidural tramadol is as powerful as intravenous tramadol for perioperative shivering.*
Keywords: *Epidural tramadol shivering.*

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INTRODUCTION:

In elective caesarian section various strategies for anesthesia has been picked by patient's tension and preference[1,2]. All strategies have their own products and bads.3Traditionally spinal anesthesia when contrasted and general anesthesia is viewed as better decision for elective Caesarian segment in numerous perspectives like less postoperative queasiness, retching, DVT, Bleeding and diminished utilization of opioids.[4]

Epidural anesthesia is better endured hemodynamically and gives capable absence of pain and term of analgesia.[5] Shivering in perioperative period is accounted for as high as 65% as a rule anesthesia and 33% in focal neuraxial anesthesia.[6] Intravenous tramadol has been utilized for quite a long time to treat perioperative shivering.[7,8] Epidural tramadol as adjuvant to neighborhood anesthesia builds quality and length of anesthesia.[9] Although epidural tramadol HCl has been utilized for better nature of anesthesia yet its impact on shivering is as yet undocumented so we intended to note adequacy of epidural tramadol for perioperative shivering. We utilized 100mg additive expense tramadol as adjuvant to bupivacaine which is protected dose10 and contrasted it and 0.5 mg/kg intravenous tramadol for prophylactic use.

MATERIALS AND METHODS:

The forthcoming, randomized control preliminary investigation was led at the Operation theaters Khyber Teaching Hospital Peshawar From June 2019 to June 2020.

Test size and strategy: Total 250 patients remembered for randomized control preliminary who got epidural square for caesarian area haphazardly separated into 2 groups, bunch 1 got epidural tramadol and gathering 2 got intravenous tramadol.

Primary result:
Shivering
Time of shivering after epidural square in minutes

RESULTS:

Apgar score at 0,5,10 minutes

Perioperative Nausea heaving

Inclusion Criteria
Age between 18-35 years
ASA 1,2
Elective Caesarian section
Prohibition standards
Quiet hesitance
Contamination of infusion site
Draining turmoil propensity
Past PONV
Previous neurological deficiency
PIH and GDM

Information assortment method, Data Collection:
We directed investigation on 250 patients and ensured educated assent. Patients arbitrarily separated into 2 groups, bunch 1 who got 100mg tramadol epidural and gathering 2 got 0.5mg/kg tramadol for shivering prophylaxis. All patients got epidural anesthesia in lumbar space L3-L4-L5 by experienced anesthesiologist. Subsequent to giving test portion of xylocaine with adrenaline, we infused 0.5%bupivacaine 20ml and 100mg additive free tramadol HCl in gathering 1 and bupivacaine alone in gathering 2 patients in epidural space. Standard 1 and 2 observing began and proceeded for next 2 hours. Infusion synephrine is utilized to keep up hemodynamics. Subsequent to surveying the square level a medical procedure began. Shivering and time of shivering noted and alongside all information gathered entered in Performa.

Data Analysis: SPSS Version 16 used to dissect measurements. Information gathered from performa and entered in programming. Unmistakable insights determined for quantitative information like age, shivering, chance to shivering, queasiness regurgitating as mean and standard deviation. ANNOVA test applied to decide centrality of factors.

RESULTS:

Gathering 1 brought about 7 patients with shivering interim to shivering was 41.42+7.29 minutes and mean APGAR was 7.56+1.14,9.83+0.41,9.99+0.08 at 1,5 and10 minutes sequentially. Gathering 2 brought about 6 patients with shivering interim to shivering was 43.66+4.27 minutes and mean APGAR was 8.48+0.85,9.78+0.62,9.97+0.15 at 1,5 and 10 minutes sequentially, table 1 shows the said results. Shivering and time to shivering between 2 groups were immaterial with centrality level of p=0.777 and p=0.524 continuously. APGAR at 1 moment was huge with level of p< 0.001 though at 5 and 10 minutes improved and got unimportant with p=0.478 and p=0.315 levels continuously. Table 2 shows the ANNOVA test for criticalness of factors. There was no critical contrast in periods of patients between two groups mean age was 26.91+4.51 and 27.91+4.74 with p=0.089. Sickness spewing was irrelevant between 2 groups p=0.856. Gathering 1 and 2 had mean period of 26.91+4.51, 27.91+4.74 continuously. Pie plots all out

number of sickness heaving cases remembered for study.

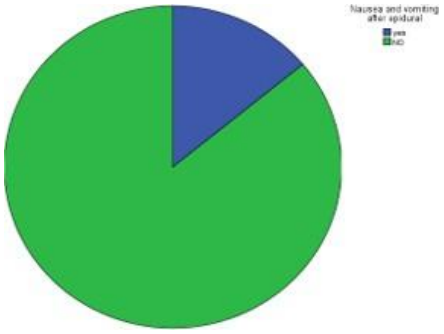

Figure No.1: Pie chart for nausea vomiting

Table No.1: Descriptive analysis of variables

Group of patients		Age of patient	Time to shivering in minutes	APGAR at 1 minute	APGAR at 5 minutes	APGAR at 10 minutes
group 1	Mean	26.9120	41.4286	7.5600	9.8320	9.9920
	N	125	7	125	125	125
	Std. Deviation	4.51702	7.29971	1.14582	.41613	.08944
group 2	Mean	27.9120	43.6667	8.4800	9.7840	9.9760
	N	125	6	125	125	125
	Std. Deviation	4.74174	4.27395	.85760	.62970	.15366
Total	Mean	27.4120	42.4615	8.0200	9.8080	9.9840
	N	250	13	250	250	250
	Std. Deviation	4.64851	5.96679	1.11019	.53317	.12573

Table No.2: ANOVA for variables

		Sum of Squares	df	Mean Square	F	Sig.
shivering	Between Groups	.004	1	.004	.081	.777
	Within Groups	12.320	248	.050		
	Total	12.324	249			
Time to shivering in minutes	Between Groups	16.183	1	16.183	.433	.524
	Within Groups	411.048	11	37.368		
	Total	427.231	12			
Nausea and vomiting after epidural	Between Groups	.004	1	.004	.033	.856
	Within Groups	30.096	248	.121		
	Total	30.100	249			
APGAR at 1 minute	Between Groups	52.900	1	52.900	51.650	.000
	Within Groups	254.000	248	1.024		
	Total	306.900	249			
APGAR at 5 minutes	Between Groups	.144	1	.144	.506	.478
	Within Groups	70.640	248	.285		
	Total	70.784	249			
APGAR at 10 minutes	Between Groups	.016	1	.016	1.012	.315
	Within Groups	3.920	248	.016		
	Total	3.936	249			
Age of patient	Between Groups	62.500	1	62.500	2.915	.089
	Within Groups	5318.064	248	21.444		
	Total	5380.564	249			

DISCUSSION:

Redistribution of heat due to sympatholytic vasodilation and compensatory thermal deregulation are main causes of shivering in central neuraxial anaesthesia which is worsened with cold environment, cold intravascular fluids and surgical exposure of patients.[11] Various methods employed to decrease the incidence of perioperative shivering included pharmacological and non-pharmacological, non-pharmacological included warming patient and environment with air warmers and warm intravenous fluids.[12] shivering increases metabolism causing hypoxemia leading to metabolic acidosis and increases catecholamine surges.[13,14] Pharmacological interventions had been successfully employed which mostly included post shivering treatment like intravenous meperidine, clonidine, ketamine, fentanyl, magnesium, xylocaine, dexamethasone, tramadol, propofol, ketanserin and doxapram. Only few available options for prophylaxis like tramadol which is intended for different purpose but gives additional benefit of shivering prophylaxis.[15] Masood Entezariasl compared dexamethasone and pethidine intravenous for prophylaxis of perioperative shivering and found that dexamethasone is more effective than pethidine in term of preventing the perioperative shivering, 47.5% placebo group, 10%dexamethasone group and 37.5% pethidine group had shivering with p=0.001.[16] Additional benefit of dexamethasone was its anti-emetic effect while pethidine gave better analgesia postoperatively but with hgher incidence of perioperative nausea vomiting.

Sarmila Guha compared prophylactic use of clonidine and tramadol and concluded in favour of tramadol for lesser complications like hypotension, bradycardia and anesthesia but of shivering was insignificant between 2 groups. ($p>0.05$)[17] Although Sarmila favoured tramadol for better analgesia but clonidine had its its own merit of patient being more calm provided blood pressure and heart rate was managed.

Bahman Hasannasab in his trial compared meperidine, doxapram, ketamine groups with perioperative shivering of 2.5%,10% and 7.5% consecutively. (p=3.9). They also noticed those groups who received ketamine and meperidine required analgesia long after the procedure. ($p<0.001$) ketamine and meperidine group had complication like nausea vomiting and anxiety but still their effect on shivering masked their complications.

Sang-Hwan Do noticed that magnesium decreases postoperative analgesic requirement and also decreases perioperative shivering.[19]

Ahmad Rastegarian first time noticed the efficiency of intrathecal meperidine and found that intrathecal meperidine significantly reduces perioperative shivering. ($p<0.04$)[20] Meperidine intrathecal was used in lesser quantity but with better analgesic quality with additional benefit on shivering.

P. Alfonsi compared intravenous lidocaine, fentanyl and meperidine. He found meperidine significantly superior to other two in terms of prophylaxis of shivering as meperidine inhibited shivering in lower body temperature. ($p<0.01$)[21]

In all Data available we found all medicines discussed above were effective in preventing perioperative shivering with some drug's superiority to other due to their efficacy or their side effects. Some drugs like clonidine, doxapram etc. were solely prescribed either for prophylaxis or treatment of perioperative shivering without any other indication. Some drugs were used for other indication and they were resulted beneficiary side effect of inhibition of shivering like tramadol.

There was only one study in Data showing efficacy of central neuraxial meperidine for perioperative shivering. In our settings meperidine is not available in contrast to tramadol which is freely available and being widely used as adjuvant to central neuraxial blocks for better, quick and prolonged analgesia. Tramadol is also considered as drug of choice for perioperative shivering in local practice. We took idea to study tramadol central neuraxial from its above discussed indication and it is proved to be as effective as intravenous tramadol for perioperative shivering. This way we got not only better analgesia but also had lesser shivering.

Limitation of our study was that it is conducted in a specific population and in a defined period of time. We recommend more observational studies for more accurate Data.

CONCLUSION:

Epidural tramadol is as effective as intravenous tramadol for perioperative shivering.

Recommendation: We recommend further studies on different populations and multi center trials as little Data is available in this regard.

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