KEYWORDS

THORACIC EPIDURAL
MRM IN REGIONAL
BREAST SURGERIES IN REGIONAL ANESTHESIA
BREAST SURGERIES
EPIDURAL ANESTHESIA
EPIDURAL SPACE
LEVOBUPIVACAINE IN EPIDURAL
ROPIVACAINE IN EPIDURAL
From,
Dr. R.BRINDHA,
M.D. POST GRADUATE,
DEPT. OF ANAESTHESIOLOGY,
GOVT. KILPAUK MEDICAL COLLEGE,
CHENNAI - 10.

To,

THE DEAN,
GOVT. KILPAUK MEDICAL COLLEGE,
CHENNAI -10.

Through proper channel,
Respected Sir,

Subject:Dissertation - M.D Anaesthesiology,

Request for Ethics Committee approval regarding,

I, Dr.R.BRINDHA, hereby submit the following necessary documents relating to my dissertation work for the approval of the Institutional Ethics committee.

"A STUDY ON COMPARISION OF 0.5% LEVOBUPIVACAINE AND 0.75% ROPIVACAINE IN THORACIC EPIDURAL FOR MODIFIED RADICAL MASTECTOMY".

Thanking you,

Yours sincerely,

Dr. R.BRINDHA

Forwarded,
From,
Dr.R.BRINDHA,
M.D. POST GRADUATE,
DEPT. OF ANAESTHESIOLOGY,
GOVT. KILPAUK MEDICAL COLLEGE,
CHENNAI - 10.

To,

THE CHAIRMAN,

INSTITUTIONAL ETHICS COMMITTEE,
GOVT. KILPAUK MEDICAL COLLEGE,
CHENNAI -10.

Through proper channel,

Subject: Dissertation -MD Anaesthesiology,

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Thanking you,

Yours sincerely,

Forwarded Dr. R.BRINDHA
I also submit the following undertaking:

1) I will start the study only after obtaining the approval of Institutional Ethical Committee (IEC).

2) I will get the informed consent from the patient and maintain confidentiality of the details.

3) I will carry out the work without detrimental to the regular activities as well as without extra expenditure to the institution or the government.

4) I will inform the committee in the event of any change in the study procedure, site, investigations or guide.

5) I will not deviate from the area of work for which I have applied to the ethical committee.

6) I will inform the IEC in the event of any adverse events encountered in my study.

7) I will abide the rules and regulations of the institution.

8) I will complete the work within the specified period and if there is any extension of my work, I will apply for the permission again and continue the work.

9) I will submit the summary/report of my work on completion of my work to the IEC.

10) I will not claim any funds from the institution while doing or after completing the work.

11) I understand the members of IEC have the right to monitor my study without prior intimation.

Thanking you,

Yours sincerely,

Forwarded, DR R. BRINDHA
DECLARATION BY THE STUDENT

I, Dr. R. BRINDHA M.D. (Anaesthesiology) Post Graduate, hereby apply for the Ethics Committee clearance certificate for my dissertation topic titled,

”A STUDY ON COMPARISION OF 0.5% LEVOBUPIVACAINE AND 0.75% ROPIVACAINE IN THORACIC EPIDURAL FOR MODIFIED RADICAL MASTECTOMY”.

under the guidance of Prof. Dr. T. Murugan M.D., D.A Professor, Dept. Of Anaesthesiology, Government Kilpauk Medical College and hospital, Chennai – 10.

I understand the implications of doing research with human subjects and will comply with the regulations and protect the health & rights of the participants at all cost.

Signature of the candidate

Dr. R. BRINDHA
DECLARATION BY THE GUIDE

I Prof. Dr. T. Murugan M.D., D.A will guide my M.D post graduate in Anaesthesiology, Dr. R. BRINDHA for his thesis (protocols mentioned above) without compromising the ethical principles & scientific norms and the care of the patients concerned and I also assure that utmost humanitarian principles will be followed while conducting the study.

Signature of the Guide
Prof. Dr. T. Murugan M.D., D.A
Dept. of Anaesthesiology, KMC

I have no objection in guiding Dr. R. BRINDHA, M.D. (Anaesthesiology) postgraduate in the project mentioned above. I shall supervise that all human rights are protected and research is carried out with utmost humanitarian principles.

Signature of the HOD
Prof. Dr. T. Murugan M.D., D.A
Dept. of Anaesthesiology, KMC
RECOMMENDATION OF THE GUIDE

The study titled ”A STUDY ON COMPARISON OF 0.5% LEVOBUPIVACAINE AND 0.75% ROPIVACAINE IN THORACIC EPIDURAL FOR MODIFIED RADICAL MASTECTOMY” by Dr.R. BRINDHA, M.D. (Anaesthesiology) Postgraduate will be done as per the recommendations of Ethics committee in the Department of Anaesthesiology. I shall supervise that all human rights are protected and research is carried out with utmost humanitarian principles.

Signature of the Guide

Prof.Dr.T. Murugan M.D., D.A Dept. of Anaesthesiology, KMC
RECOMMENDATION OF THE HOD

The study titled ”A STUDY ON COMPARISION OF 0.5% LEVOBUPIVACAINE AND 0.75% ROPIVACAINE IN THORACIC EPIDURAL FOR MODIFIED RADICAL MASTECTOMY” by Dr. R. BRINDHA M.D. (Anaesthesiology) Post Graduate will be done as per the recommendations of Ethics committee in the Department of Anaesthesiology. I shall supervise that all human rights are protected and research is carried out with utmost humanitarian principles.

Signature of the HOD

Prof. Dr. T. Murugan M.D., D.A

Dept. of Anaesthesiology, KMC
PROTOCOL

Name : Dr.R.BRINDHA

Course : MD Anaesthesiology(MAY 2016 – MAY 2019)

Duration : 6 months

Topic : ”A STUDY ON COMPARISION OF 0.5% LEVOBUPIVACAINE AND 0.75% ROPIVACAINE IN THORACIC EPIDURAL FOR MODIFIED RADICAL MASTECTOMY”.

Guide : Prof.Dr.T. Murugan M.D., D.A

Professor of Anaesthesiology,

Department of Anaesthesiology,

Govt. Kilpauk Medical College and Hospital,

Chennai 10.

Center : Govt. Kilpauk Medical College and Govt.RoyapettahHospital, Chennai.

Study Design: A prospective, Non–Randomized, double Arm, Single-Blinded, controlled study.
INTRODUCTION:

Thoracic epidural anesthesia is increasingly being used for abdominal, major vascular and cardiothoracic & breast surgeries. The objective of thoracic block is not solely to block noxious afferent stimuli from the surgical site, but to impart a bilateral selective thoracic sympathectomy. Provision of pain relief and sympatholysis of such magnitude that allows patients to cough, breath deeply and mobilize can contribute to enhanced postoperative outcomes such as improved respiratory function, reduction in ileus, nausea and vomiting.

Levobupivacaine and ropivacaine, the two new long-acting local anesthetics, have been developed as an alternative to bupivacaine, after the evidence of its severe toxicity. Both of these agents are pure left-isomers and, due to their three-dimensional structure, seem to have less toxic effects on the central nervous system (CNS) and on the cardiovascular system.

Ropivacaine is produced as pure “S” enantiomer with lower lipid solubility, easier reversibility after inadvertent intravascular injection, significant reduction in central nervous system toxicity, lesser motor block and greater differentiation of sensory and motor block. Increasing concentrations caused quicker onset, greater intensity, slower regression, and longer duration of motor blockade. It is less lipophilic than bupivacaine and is less likely to penetrate large myelinated motor fibers resulting in a relatively reduced motor blockade. The reduced lipophilicity is also associated with decreased potential for CNS and cardiotoxicity. Thus, ropivacaine appears to be an important option for regional anesthesia and for the management.

Levobupivacaine, the isolated S(-) enantiomer of bupivacaine, has been shown to be less cardiotoxic than bupivacaine in preclinical studies. Owing to the lower affinity of the S(-) isomer to the cardiac sodium channels compared to the R(+) isomer, it is associated with less cardiac side effects.
Both of these agents are pure left isomers, and based on their three-dimensional structure; they have less toxicity to both the central nervous system and the heart. The clinical profiles of levobupivacaine and ropivacaine are similar to that of racemic bupivacaine, and the minimal differences among the three agents are mainly related to the slightly different anesthetic potency. They produce effects similar to other local anesthetics via reversible inhibition of sodium ion influx in nerve fibers. Hence, in this study to compare the effects of levobupivacaine 0.5% and ropivacaine 0.75% in thoracic epidural anesthesia for modified radical mastectomy.

OBJECTIVES OF THE STUDY:

The aim of the study is to compare 0.5% levobupivacaine and 0.75% ropivacaine in thoracic epidural for modified radical mastectomy by assessing

1. Time of onset
2. Duration, i.e., time interval between epidural drug bolus and first epidural drug requirement.
3. Requirement of sedatives
4. Cardio toxicity i.e monitoring vital parameters, electrocardiography, blood pressure, heart rate
5. Conversion of general anesthesia
6. Patient comfort i.e. visual pain analogue scale

REVIEW OF LITERATURE:

Dr. Shalina Chandranet al.

It is important that new local anaesthetics that have lower cardiotoxicity are adopted to ensure that regional techniques using large amounts of local anaesthetics remain safe with minimal complications. In the present study using 0.75% ropivacaine and 0.5% bupivacaine epidurally, there were no significant differences in the block parameters but ropivacaine was associated with relatively longer duration of postoperative analgesia.
Vijeta Maheshwari et al. In the present study, we selected two different dosages of local anesthetics – i.e., 0.5% levobupivacaine for comparison against 0.75% ropivacaine for comparison. The reason for this was a reported slower onset time for ropivacaine as compared to levobupivacaine for the same dose. However, an enhanced dose of ropivacaine (0.75%) has been shown to be comparable to a lower dose of levobupivacaine (0.5%).[8]

Bajwa et al.[10] who showed that epidural administration of 0.75% ropivacaine epidurally shows a declining trend from around 75 min postadministration interval. HR lowering effect of epidural ropivacaine has been proven in animal studies 60 min after administration.[11] Thus, it can be seen that both the drugs have a similar effect on HR which varied under different conditions. As far as the present study is concerned, both the drugs showed a similar effect and did not differ significantly. For none of the drugs, any side effect in terms of bradycardia was noticed.

Casati and Baciarello et al [12] reported that levobupivacaine 0.5% produces an epidural block of similar onset, quality, and duration as by the same volume of 0.5% bupivacaine with a motor block deeper than that produced by 0.5% ropivacaine.

MATERIALS AND METHODS

SOURCE OF DATA:

Patients undergoing modified radical mastectomy done under general anesthesia at Govt. Kilpauk Medical College and Govt. Royapettah Hospital, Chennai between February 2018 and July 2018 will be assessed for inclusion and exclusion criteria and will be included in the study after obtaining written informed consent.

SAMPLE SIZE: 60

Sample size was determined based on the study “a study on comparison of 0.5% levobupivacaine and 0.75% ropivacaine in thoracic epidural for modified radical mastectomy”
Description:

The formula for determining sample size is given as:

\[ n = \left( \frac{z_{\alpha/2} \cdot \sigma}{E} \right)^2 \]

Where
- \( n \) = Sample size
- \( \sigma \) = Population standard deviation
- \( e \) = Margin of error
- \( Z \) = The value for the given confidence interval

- The confidence level is estimated at 95%
- Standard deviation 58
- With a z value of 1.96
- The confidence interval or margin of error is estimated at +/-15
- Assuming that 80 percent as power of the study, minimum sample size required for the study was calculated to be 58.

In our study 60 subjects were chosen

(n=30 in Group A, n=30 in Group B)

STUDY DESIGN:

A prospective, Non-Randomized, double Arm, Single-Blind, Controlled study

INCLUSION CRITERIA:

1) Patients undergoing elective modified radical mastectomy under thoracic epidural anesthesia.
2) Age between 30 to 60 years
3) Females
4) ASA class 1 and 2
5) Patients who have given valid informed consent
EXCLUSION CRITERIA:

1) Patients not satisfying inclusion criteria.
2) Patients with an allergy or sensitivity to opioid group of drugs and local anesthetics.
3) Patients with spinal deformities
4) Any contraindication to epidural anesthesia
5) Patients with neurological disorders
6) Impaired ability to communicate (e.g., confusion, poor hearing or language barrier)
7) Patients who are unconscious or severely ill.
8) Pregnant patients.
9) Patients with Coagulation disorders.

MATERIALS:

1) Boyles apparatus
2) Laryngoscope with different blade sizes
3) Other airway gadgets used in case of difficult intubation
4) Endotracheal tubes
5) Drugs for administering general anesthesia
6) Epidural needle and catheter set
7) Glass syringe
8) Inj. Fentanyl , available as ampoules( one ampoule contains 2ml, each ml contains 50 mcg of Fentanyl)
9) Inj. Levobupivacaine available as vials in concentration of 0.5% ( one ampoule contains 10 ml , each ml contains 5mg)
10) Inj. Ropivacaine available as vials in concentration of 0.75% ( each vial contains 20 ml, each ml contains 7.5 mg )
11) Inj.midazolam1mg/ml total 5mg/5ml vial.

METHODOLOGY:

Patients in the above mentioned inclusion criteria selected will be counselled about the risks and benefits involved in the study. After getting consent, patients who are willing to be included in the study will be enrolled and analyzed. A total of 60 patients will be included in the study. Patients will be divided into two groups of 30 in each based on computerized random number into group A and group B. The patients in Group A will be receiving 0.5% levobupivacaine, the patients in Group B will receive solution containing 0.75% ropivacaine. The total volume of drug in either group will be 15ml.
This study is designed as a prospective, comparative study. Patients will be preoperatively evaluated, clinically examined and proper investigations will be done prior to the assessment. Procedures will be explained in detail and written consent will be obtained. The procedure will be carried out in the theatre. Routine monitoring included ECG, Pulse Oximetry, NIBP. Intravenous cannulation done with 18G venflon.

Under sterile aseptic precautions, with patient in right lateral position, midline or paramedian approach, at the level of T3-T4 intervertebral space, after subcutaneous infiltration of 2ml of 2% lignocaine, using 18G epidural needle, epidural space is identified by loss of resistance technique, and 20 G catheter is threaded in via the needle. After ensuring that blood or cerebrospinal fluid was not aspirated via catheter, 3ml of 2% lignocaine with adrenaline (1:2,00,000) dilution was administered via it.

The epidural drug administration is given 15 ml in both groups before 20 minutes of incision and sedation with inj.fentanyl 100mcg for both groups and for maintenance drugs given according to the duration.

<table>
<thead>
<tr>
<th>ASSESSMENT CRITERIA</th>
<th>Group A</th>
<th>Group B</th>
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METHOD OF COLLECTION OF DATA

60 patients enrolled in the study who undergo elective modified radical mastectomy under thoracic epidural anesthesia will be assessed individually. The parameters mentioned above in the table will be recorded at every 15 minutes throughout the surgery. The epidural top up dose will be 8ml of 0.5% levoBupivacaine in group A, 8ml of 0.75% ropivacaine in group B.

Duration of analgesia is calculated from the time of epidural bolus to the time when first top up dose is required.

STATISTICAL ANALYSIS:

Descriptive statistics will be done for all data and reported in terms of mean values and percentages. Suitable statistical tests of comparison will be done.

Continuous variables will be analysed with the unpaired t test and ANOVA single factor test.

Categorical variables will be analysed with the Chi-Square Test and Fisher Exact Test.

Statistical significance will be taken as P<0.05. The data will be analysed using SPSS version 16 and Microsoft Excel 2007.
References:

INFORMED CONSENT FORM

STUDY:”A STUDY ON COMPARISON OF 0.5% LEVOBUPIVACAINE AND 0.75% ROPIVACAINE IN THORACIC EPIDURAL FOR MODIFIED RADICAL MASTECTOMY”

STUDY CENTRE: GOVT. KILPAUK MEDICAL COLLEGE & GOVT ROYAPETTAH HOSPITAL, CHENNAI

PATIENT’S NAME:

PATIENT’S AGE:

I.P NO:

Patient may check ( ) these boxes

I confirm that I understood the purpose of the procedure for the above study. I have the opportunity to ask question and all my questions and doubts have been answered to my complete satisfaction

I understand that my participation in the study is voluntary and that I am free to withdraw at any time without giving reason, without my legal rights being affected.

I understand that the ethical committee members and the regulatory authorities will need not my permission to look at my health records, both in respect of the current study and any further research that may be conducted in relation to it, even if I withdraw from the study I agree to this access. However, I understand that my identity will not be revealed in any information released to third parties or published, unless as required under the law.

I agree not to restrict the use of any data or results that arise from the study. I agree to take part in the above study and to comply with the instructions given during the study and faithfully co operate with the study team and to immediately inform the study staff if I suffer from any deterioration in my health or well being or any unexpected or unusual symptoms.

I hereby consent to participate in this study.
I hereby give permission to undergo complete clinical examination and diagnostic tests including hematological, biochemical, radiological tests.

Signature / thumb impression:

Patient’s name and address: place: date:

Signature of the investigator:

Study investigator’s name: place: date:

PARTICIPANTS” INFORMATION SHEET

Investigator : - Dr.R.BRINDHA

Title”A STUDY ON COMPARISION OF 0.5%LEVOBUPIVACAINE AND 0.75% ROPIVACAINE IN THORACIC EPIDURAL FOR MODIFIED RADICAL MASTECTOMY”

You are invited to take part in this research study. We have got approval from the IEC. You are asked to participate because you satisfy the eligibility criteria.

What is the purpose of this research?
In this study, efficacy of 0.5% levobupivacaine and 0.75% of ropivacaine compared in thoracic epidural so we can use this new drug as a sole epidural and also to assess the benefits and complications. In future both drugs will be used extensively because of less complications and prolonged duration of action…

BENEFITS:

This study will help us in determining efficacy, duration, postoperative analgesia, requirement of sedatives during thoracic epidural and also to assess the cardiotoxicity and neurotoxicity… It also helps in reducing the requirements of other opioid analgesic drugs and NSAIDS given via systemic route in the postoperative period which causes many side effects like nausea, vomiting, itching, respiratory depression.

DISCOMFORTS AND RISKS:

Thoracic epidural for modified radical mastectomy may cause discomfort or anxiety during surgeries. Sometimes intercostal paralysis causes respiratory depression. Local anesthesia toxicity may also occur.

CONFIDENTIALITY:

Patients who participated in the study and their details will be maintained confidentially and at any cost, those details will not be let out.

RIGHT TO WITHDRAW:

Patients will not be forced to complete the study. At any cost, in such circumstances the treatment will not be compromised.

Date: Signature of the investigator:

Place: Signature/Thumb impression of the participant
அப்புழுப்பொழுதுசெவுதல்

சிற்றுரச் செழுத்தா உருசிய செழுத்தா செழுத்தான்குட்டு செழுத்தா

அப்புழுசும் விளக்கம்: பின்னர்

பொருள்தொடரியில் குறைந்துரியவும் குறைந்துரியவும் குறைந்துரியவும்

பொருள்தொடரியில் குறைந்துரியவும் குறைந்துரியவும் குறைந்துரியவும்

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அதிகாலத்தி பிரிவினரிடமிப்பான கல்வியமைப்பின் குடும்பத்தில்.

தினசரியப்படுத்தப்படக்கூறுக்கிராணை பண்புறீலைகு 

நான்காலகத்தி விளக்கத்தில் குறிப்பிடும் விளக்கங்களை 

நூற்றாண்டாண்டில் நடைபெறாத பல்வேறு அறிக்குறிகளை 

நிகழ்த்தும் வகையில் குறிப்பிட்டுள்ளார்.

இந்த அம்பாரத்தில் வழங்கும் வலிமைப்படுத்தப்பட்டு, 

இந்த அம்பாரப் பல்வேறு வகைகளில் குறிப்பிட்டுள்ள 

பல்வேறு வகைகளுள் பல்வேறு வகைகளில் குறிப்பிட்டு 

அம்பாரப் பல்வேறு வகைகளில் குறிப்பிட்டு 

அம்பாரின் விளக்கங்கள் வருடாக வாழ்கிறார்.
பல்கலைக்கழகத்திலிருந்து கதவு பொருளை வழிபடுத்துவதற்கான குறிப்பிட்டியலுக்கு முன்னர் பொருளினருக்கு பதினையாய் அநுமதிக்கப்பட்டது. பதினையாய் அநுமதிக்கப்பட்டுள்ள பொருளினருக்கு பதினையாய் அநுமதிக்கப்பட்டான விளக்கம் ஆகும். 

பல்கலைக்கழகத்திலிருந்து பதினையாய் அநுமதிக்கப்பட்டது பொருளினருக்கு ஆனையத்திலிருந்து பதினையாய் அநுமதிக்கப்பட்டான விளக்கம் ஆகும்.
பண்டையப்பரச் தகவல்கள்

இன்பப்பரசம் அரசுச் சாராங்கமற்றும் பக்தியுடன் அரசுத் தொடர்புச்செல்வுப் பிள்ளையார்

அவகைப் பண்டையப்பரச் பிள்ளை

படகுதிகளே பலராட்டி போதும் கட்டமைப்புகளின் போது பெறுமதிகளை கண்டுபிடித்து படுத்துகிறது

பலராட்டியும் தொடர்புச்செல்வு பிள்ளையாருடைய பெயர் அச்சுப்பெயர்

பொருளியல்

இன்னும் அவகைப் பண்டையப்பரசான் பலராட்டி

பிள்ளையாருடைய பெயர் அச்சுப்பெயர்

இன்னும் செயல்பாடுகள் மற்றும் பொருளியல் பொருளியல் பதிவுசெய்யுவதிலும்

இன்னும் செயல்பாடுகள் மற்றும் பொருளியல் பொருளியல் பதிவுசெய்யுவதிலும்

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ஸ்ரீபிருத்தியால் என்னும் புநித அந்தப்பக்கியம் நிறுத்தப்படுவதை விளக்கக்கூட்டுவதற்கு அனைத்தின் நோக்கமும் வேண்டும். அந்தப்பக்கியம் பொறுப்பாக்கும் தொடர்பில் அதற்கு அரிகள் பொருந்தாமல் கேள்விகள் ஆச்சரியாக இருக்கும்.

அந்தப்பக்கியால்
பாண்டிகரங்குத்தான் நடும்பும்

துற்கு: