

# The Correlation Between Crawford Wedge and 15° Table Left Tilt on Hemodynamic Changes in Caesarean Section: A Prospective Observational Study

Alfairose J<sup>1</sup>, Swetha Ramani C.K<sup>2</sup>, Rupika E<sup>3</sup>, Ajith G<sup>4</sup>, Ashwini Priya D<sup>5</sup>

<sup>1,3</sup>Research Scholar, Anaesthesiology, Sri Balaji Vidyapeeth University, Mahatma Gandhi Medical College & Research Institute, Pondicherry

<sup>2</sup>Associate Professor, Anaesthesiology, SRM Medical College & Hospital, Chennai

<sup>4</sup>Lecturer, Anaesthesiology, Panimalar Medical College & Hospital, Chennai

<sup>5</sup>Assistant Professor, Anaesthesiology, Sri Venkateshwara Medical College, Chennai

## ABSTRACT

**Introduction:** The supine hypotensive syndrome occurs due to the gravid uterus compressing the inferior vena cava when a pregnant woman lies in a supine position, resulting in reduced central venous return also known as inferior vena cava compression. Syndrome supine hypotension syndrome results in signs of shock and by a decrease in maternal blood pressure. This may result in life-threatening complications in the mother and fetus. To reduce the incidence of supine hypotension syndrome, a few practices were recommended by authors in maternal positioning during Lower abdominal cesarean section (LSCS) surgeries. Here in this study, we are comparing hemodynamic stability between Table left tilt and wedge under the right hip.

**Keywords:** Obstetrics & Anaesthesia, hypotension syndrome, spinal anaesthesia, prevention

**Materials and Methods:** 35 parturients were studied by left ward table tilt, assigned as Group 1. Another 35 parturients were studied by placing a 15 cm wedge under right hip (which gives 15° left lateral tilt), assigned as Group 2. Hemodynamic stability was assessed in between table tilt and Wedge groups.

**Results:** Systolic blood pressure was lower in the table left tilt group than wedge group and it is statistically insignificant. Diastolic Blood pressure fall was more significant in tilt group than wedge group. The fall in the map is more significant in the tilt group in the first 2 mins & thereafter remained similar in both the groups. Throughout the procedure the Heart Rate was significantly lower in tilt group than the wedge Group. APGAR SCORE showed no significant difference between two groups (group 1 & group 2). Ephedrine Requirement was more in the tilt group than wedge group & Surgeon satisfactory score was higher in the wedge group than tilt group.

**Conclusion:** To conclude, the use of a Crawford wedge or placement of a wedge under the right hip during Lower Abdominal Cesarean Section (LSCS) surgery effectively prevents Supine Hypotension Syndrome. Our study highlights the wedge's superiority over table tilt in maintaining hemodynamic stability, reducing ephedrine usage, and enhancing comfort for both surgeons and patients. This preference ensures continuous patient monitoring and facilitates timely intervention by anesthesiologists. Embracing such practical interventions promises to elevate perioperative care standards, ensuring safer outcomes in obstetric anesthesia.

## **INTRODUCTION**

The supine hypotensive syndrome is another name for aortocaval compression syndrome. When the patient is positioned in the Supine position, this pathophysiologic condition develops in a pregnant woman, often after 20 weeks of gestation. The uterus's constriction of the inferior vena cava and the aorta causes a blockage in blood flow from the lower extremities back to the mother's heart and central circulation. In turn, this restricts blood supply to the placenta, which may cause illness and even death in both the mother and the foetus. The medical staff must be aware of this entity as a potential cause of hypotension in the pregnant patient and quickly begin corrective measures if this is suspected due to the increased morbidity and mortality to both patients involved.

## **ETIOLOGY:**

The lower (L4 - L5) spinal region's vertebral column bows outward in the direction of the abdominal- pelvic cavity as a result of the lumbar spine's lordotic curvature. The uterus is situated at the same L4 - L5 spinal level intra- abdominally. The inferior vena cava is situated between the uterus and the lumbar spine. When the mother is standing or sitting, gravity helps to keep the uterus and enclosed foetus outward and away from the inferior vena cava and lumbar spine, but this is not the case when the mother is supine. Gravity enables the uterus to rest posteriorly onto the lordotic spine while the patient is supine, potentially squeezing the inferior vena cava beneath its weight. This compression may significantly obstruct the blood flow returning from the extremities, which would cause maternal hypotension.

Howard and colleagues first described the supine hypotensive condition in 1953. In this study, when 160 gravid females were placed in a supine position, 18 of them showed a drop in blood pressure. Without receiving radio- logic or angiographic evidence, they hypothesized that the gravid uterus' blockage of the inferior vena cava was the cause of the drop in systemic blood pressure.

In order to determine aortic compression by the uterus when lying supine, Bieniarz et al. assessed blood pressure in the upper and lower extremities together with aortic angiographic measurements in 1966. Since the aorta was linked to the supine hypotensive syndrome as a result of this investigation, the terms "aortocaval compression syndrome" and "supine hypotensive syndrome" have become interchangeable.

## **EPIDEMIOLOGY:**

Tragically, trauma and/or accidental damage happen regularly during pregnancy, with complications occurring in six to seven percent of all pregnancies. However, when the maternal patient is positioned in the same position for normal surgeries and deliveries, it has also been documented to happen. When the patient is placed in a posture for safe transport, spinal immobilization precautions, and resuscitation, aortocaval compression syndrome may develop. It occurs in patients whose gestational age is longer than 20 weeks, though it may occur sooner in certain circumstances.

## **PATHOPHYSIOLOGY:**

The uterus circulates blood at a rate of roughly 60 milliliters per minute while not pregnant. However, the uterus can actually require 10 times as much blood when the baby is fully developed, or an incredible 600 milliliter's every minute. Because of this heightened vascular dynamic state, even a small decrease in blood return may have a pronounced negative effect on the circulation of the mother and foetus. Aortocaval compression syndrome symptoms include pallor, diaphoresis, nausea, hypotension, and dizziness in addition to initial tachycardia and late bradycardia. Due to the lower extremities' resistance to blood flow back into the mother's circulation as a result of steadily increasing venous pressures there throughout pregnancy, all of these signs and symptoms are brought on.

### **HISTORY AND PHYSICAL EXAMINATION:**

Does not turn up any distinctive symptoms that identify this illness. Aortocaval compression is diagnosed mainly on clinical examination and suspicion, although ultrasound imaging may also be used to confirm the diagnosis. The syndrome is likely to go undiagnosed if this pathophysiologic state is not understood. Always pay close attention to your vital signs and be aware of any changes that are typical for each trimester of pregnancy. During pregnancy, blood pressure dropped; however, at term, it returned to normal. Any hypotension in a patient in the third trimester is therefore abnormal. Similar to any hypotensive patient, numerous etiologies should be investigated at once and swiftly treated. These can include, but are not limited to, traumatic bleeding in the liver, spleen, or kidneys, pelvic fractures, uterine rupture

### **EVALUATION:**

Clinical examination is the only method used to assess aortocaval compression syndrome. Although this has not yet been researched, ultrasonography examination may have a role.

### **TREATMENT / MANAGEMENT:**

The physical removal of the uterus from the spine (and inferior vena cava) is required once other causes of hypotension are addressed and/or excluded. One of the following options is available for achieving this. When there is no trauma present, the patient may simply be placed in the left lateral position. However, when there is trauma, the spine must also be immobilized at the same time, and other maneuvers are advised.

It will probably be essential to immobilize the cervical spine while the patient is on a backboard, which provides a special problem. The lateral posture can be achieved in one of three methods without endangering the immobilization. This can be accomplished manually or with the aid of lifts, such as pre-built lifts or towel rolls positioned beneath the board.

This method can be challenging at times since a pregnant woman's weight pulls her to her left side and could jeopardize spinal immobilization. Although challenging, in-line immobilization is important. This movement is safe for the uterus and the foetus, easy to perform and doesn't require any special skills.

## REVIEW OF LITERATURE

**Badrinath et al.** conducted a study in 2019 comparing the effects of pelvic tilt against table tilt on preventing hemodynamic changes during spinal anaesthesia for Caesarean section. As a result, the wedge group had 45% Primigravida and 55% Multigravida, while the tilt group had 50% Primigravida and 50% Multigravida, respectively. The findings indicate that there are no appreciable differences between the table tilt group and the wedge group in terms of heart rate, systolic blood pressure, diastolic blood pressure, mean arterial blood pressure, or saturation. The positioning of a Crawford wedge and the application of a table tilt were both equally effective in reducing supine hypotension syndrome for patients following caesarean section, they found. However, there was an incidence of hypotension in both groups.

**Ahmed Hasanin, Remoon Soryal, et al** They found that before to Sub Arachnoid Block, left lateral tilting was not associated with any substantial hemodynamic alterations. Following SAB (in the supine position), a significant reduction in mean arterial pressure, cardiac output, stroke volume, and systemic vascular resistance was noted. They came to the conclusion that moving a full-term pregnant woman from a supine to a left lateral tilting posture after SAB results in an increase in cardiac output and mean arterial pressure. Between the two tilt angles (15 ° and 30 °), there is no change.

**Osama Y.A. Khalifa, et al** conducted a comparison of the effectiveness of various physical interventions in preventing severe hypotension during caesarean births in the supine hypotension syndrome in December 2018. At The end result were highest blood pressure drop and total amount of ephedrine consumed in the manual displacement group were considerably lower than those in Additionally, the manual displacement group had higher patient and surgeon satisfaction than the other two groups. Conclusion When performing a caesarean delivery under subarachnoid anaesthesia with more patients, manual uterine displacement is more successful than a modified Crawford edge and a 15° left table tilt in preventing severe hypotension in parturients with supine hypotension syndrome. under spinal anaesthesia was completed in July 2016 by **Srihari Babu Gonuguntla, Sandhya Jampala, et al** Systolic blood pressure was shown to be statistically insignificantly lower with a wedge beneath the right buttock or hip compared to manual uterine displacement. Diastolic blood pressure dropped in both groups at about the same rates. Mean Arterial Pressure gradually decreases in both groups, but this decline is not statistically significant. Although the Wedge Group's heart rate was lower than the MUD Group's, the difference was not statistically significant. They came to the conclusion that neither manual uterine displacement nor placing a wedge under the right hip significantly differed from one another in terms of hemodynamic alterations. Manual uterine displacement is more comfortable for surgeons and anesthesiologist to focus on patient monitoring and care.

In a 2008 study, **Z. Q. Zhou et al** compared the effectiveness of lumbar wedges and pelvic wedges after and epidural anaesthesia during caesarean delivery. They found that, compared to the lumbar wedge group, the incidence of hypotension was considerably higher in the pelvic wedge group. In comparison to the lumbar wedge group, the average ephedrine dose given to hypotensive parturients in the pelvic wedge group was greater. At seven, eight,

and nine minutes, SBP dropped considerably in both groups compared to baseline. The pH of the umbilical arterial blood or the Apgar scores did not significantly differ between the two groups. All caesarean births were successfully carried out under CSEA, and the mean time from spinal puncture to skin incision was roughly 16 minutes. Due to a high block above T2, one parturient required manually assisted mask ventilation. No parturient expressed dissatisfaction with the treatments employed or encountered a problem as a result of inserting the wedge.

On April 18, 2007, **P. Kundra et al** completed a study on manual uterine displacement during Caesarean sections. They discovered that, as compared to a 15° left lateral table tilt in parturients undergoing Caesarean section, manual uterine displacement significantly lowers the incidence of hypotension and the need for ephedrine. The average (SD) decrease in systolic blood pressure was 28.8 (7.3) mmHg for the leftward manual displacement group and 20 (12.7) mmHg for the 15° left lateral table tilt group. In both groups, it took 4.5 minutes for the systolic blood pressure to decline to its highest level. They came to the conclusion that manual uterine displacement, as opposed to a 15° left lateral table tilt, successfully lowers the incidence of hypotension and the need for ephedrine in parturients undergoing Caesarean section.

**Luciano Frassanito, Chiara Sonnino et al** performed the Hypotension Prediction Index with Noninvasive Arterial Pressure Waveforms in Awake Caesarean Delivery Patients Under Spinal Anaesthesia in March 2022. They discovered that 23 patients (48%) experienced hypotension. The HPI revealed 71 alarms among the hypotensive individuals. With a sensitivity of 83% and specificity of 83% three minutes prior to the event, a sensitivity of 97% and specificity of 97% (95% CI, 92-100) two minutes prior to the event, and a sensitivity of 100% and specificity 100% one minute prior to the occurrence, the HPI accurately identified hypotensive episodes. They came to the conclusion that HPI can accurately detect impending intraoperative hypotension in conscious patients under SA in real time and continuously. They discovered good agreement between NIBP MAP and Clear Sight MAP.

On April 15, 2003, a study on hypotension after combined spinal-epidural anaesthesia for Caesarean section: left lateral position vs. tilted supine position was completed by **C. Mendonca, J. Griffiths, et al**. Less mothers were hypotensive while in the study position, with 29 (64%) in the lateral group compared to 38 (90%) in the tilted supine group, according to the findings. Compared to the tilted supine position with tilt, the complete left lateral posture lowers the incidence of early hypotension and makes it easier to cure.

**G. Dahlgren, F. Granath**, and colleagues conducted research in April 2007 on the prediction of hypotension during spinal anaesthesia for caesarean delivery and its relationship to the impact of crystalloid or colloid preload. 36% of them had positive stress test results, showing a decreased tolerance for the supine position. For patients randomly assigned to the crystalloid group (n = 25), the stress test's sensitivity and specificity for clinically severe hypotension (symptomatic hypotension) were 69 and 92%, respectively. In comparison to the other groups, patients with a positive stress test who had a crystalloid preload demonstrated a higher frequency of hypotension (90% vs. 33%) and a greater

requirement for ephedrine (20.0 mg vs. 8.4 mg). They came to the conclusion that a subset of pregnant women who had a positive preoperative supine stress test were more likely to experience clinically significant hypotension following caesarean birth while under spinal anaesthesia. Compared to women with a negative stress test, these women appear to be more likely to benefit from prophylactic colloid solution

## **AIM AND OBJECTIVES**

### **AIM:**

The aim of the study is to evaluate the relationship between wedge & table tilt on supine hypotension during caesarean section

### **OBJECTIVE:**

#### **Primary objective:**

The primary objective of the study is to determine the relationship between Crawford wedge & 15° table left tilt on hemodynamic changes in caesarean section

#### **Secondary objective:**

The secondary objective of the study is to estimate the extent decrease in Blood Pressure, Ephedrine requirement, time taken for delivery, APGAR score & surgeon satisfaction

## **MATERIALS AND METHODS**

After receiving Institutional Ethical Committee approval and informed written consent, 70 parturients with American Society of Anaesthesiologists Physical Status I and II aged between 18 to 30 years scheduled for caesarean surgeries were enrolled in the study.

**STUDY SITE:** The study was conducted in the department of Anaesthesiology, SRM Medical College Hospital And Research Centre, Potheri, Kattankulathur, Chengalpattu District.

**STUDY DESIGN:** This study was done in a prospective observational method

**RANDOMIZATION:** Based on computer generated random numbers

**STUDY POPULATION:** All full-term parturients

### **PERIOD OF STUDY:**

18months.

### **INCLUSION CRITERIA:**

- All full-term parturients.
- ASA 1&2 parturients
- Age between 20 to 35 years

**EXCLUSION CRITERIA:**

- Obesity.
- parturients less than 36 weeks
- Diabetes mellitus, severe hypertension, eclampsia, antepartum hemorrhage, placental tare.
- Severe Anemia patients
- Abnormal fetus.
- Age below 20
- Age above 35

**METHODOLOGY:**

After obtaining approval from the Institutional Ethical Committee, patients satisfying the inclusion criteria were given a clear explanation regarding the anaesthesia procedure in their vernacular language. A written consent will be obtained in each case. patients were randomly divided into two group, wedge and tilt. Patients were subjected to Pre-anaesthetic assessment and risk stratified as per guidelines. Baseline investigations like Hb (Hemoglobin), RBS (Random blood sugar), RFT (Renal Function Test), CXR (Chest X-Ray) and ECG (Electrocardiogram) were done in all patients. Overnight NPO (Nil per oral) were ensured in all the patients and maintenance fluid with respect to holliday segar formula from NPO were administered. IV access with 18G venflon is secured in all patients. Monitors- Pulse oximeter, NIBP, ECG will be attached. Baseline vital parameters were taken while the parturients were in sitting position using Cardiocap; Datex Instrumentation Group, Helsinki, Finland. A coload of 10 ml/kg normal saline 0.9% was started after insertion of intravenous line and during induction of anesthesia. Parameters were recorded and documented.

The following data was collected from the case record before patient shifted to the operation theatre.

- Blood pressure
- Heart rate
- Oxygen saturation

The surgeons were asked to scrub and be ready before induction of anesthesia to minimize time of aortocaval compression after induction of spinal anesthesia. Spinal anesthesia was induced using 10 mg hyperbaric bupivacaine 0.5% and 25 µg(mcg) fentanyl through a 25 G Quincke spinal needle in sitting position at the L3- 4 spinal level after which the patient laid supine and immediately the positioning method was applied.

Blood pressure, heart rate, and oxygen saturation were monitored every minute and recorded until delivery of the placenta and then every 5 min. Time from anesthesia until delivery of the placenta was assessed. Maximum drop in systolic blood pressure was recorded.

Apgar score of the baby was assessed at 1,5&10 min. Ephedrine was given incrementally when the systolic blood pressure dropped more than or equal to 30 mmHg in 5 mg boluses every 3 min. The total dose of ephedrine was recorded. Atropine was given at a dose of 0.01 mg/kg if the heart rate decreased below 70 beats/min and recorded. At any time, the physical technique of reducing aortocaval compression could be stopped if the surgeon was totally unsatisfied and could not operate easily. Time from anesthesia to delivery (min) and time from skin incision to delivery (s) were recorded. The level of sensory block was assessed.

Surgeon satisfaction with the technique was recorded as either yes or satisfied when he can operate without any disturbance because of the patient position or not satisfied when he can operate with

moderate disturbance or cannot operate at all because of the patient position. Patient satisfaction was asked for after surgery in the recovery room and recorded on a scale same as surgeon satisfaction

### Parameters noted:

1. Hemodynamics: Blood pressure, Heart rate, O2 saturation
2. Ephedrine requirement (mg)
3. Surgeon satisfaction: yes / no
4. APGAR score of baby

### Hemodynamics during

- Baseline
- After wedge / tilt
- 1 min, 2 min, 5 min after spinal anesthesia
- 10 min, 15 min, 20 min, 30 min after spinal anesthesia

### SAMPLE SIZE ESTIMATION

$$\begin{aligned} P &= 60 & q &= 40 & d &= 0.2 * 60 \\ & & & & d &= 12 \\ N &= \frac{z\alpha^2/2 pq}{d^2} \\ &= \frac{(1.96)^2 60 * 40}{(12)^2} \\ &= \frac{9216}{144} \\ &= 64 \\ N &= 64 \end{aligned}$$

After institutional scientific and ethical committee approval this study was done in 64 patients admitted in SRM hospital requiring caesarean section surgery after meeting inclusion criteria.

### STATISTIC ALANALYSIS

The data collected analyzed using SPSS software. Descriptive analysis of parametric parameters will be expressed as means and standard deviation and as count (%). Ordinal data will be expressed as median and range. Correlation will be done using linear regression model.  $P < 0.05$  will be considered statistically significant.

Statistical Package for Social Sciences (SPSS, IBM Version 21) for Windows was used for



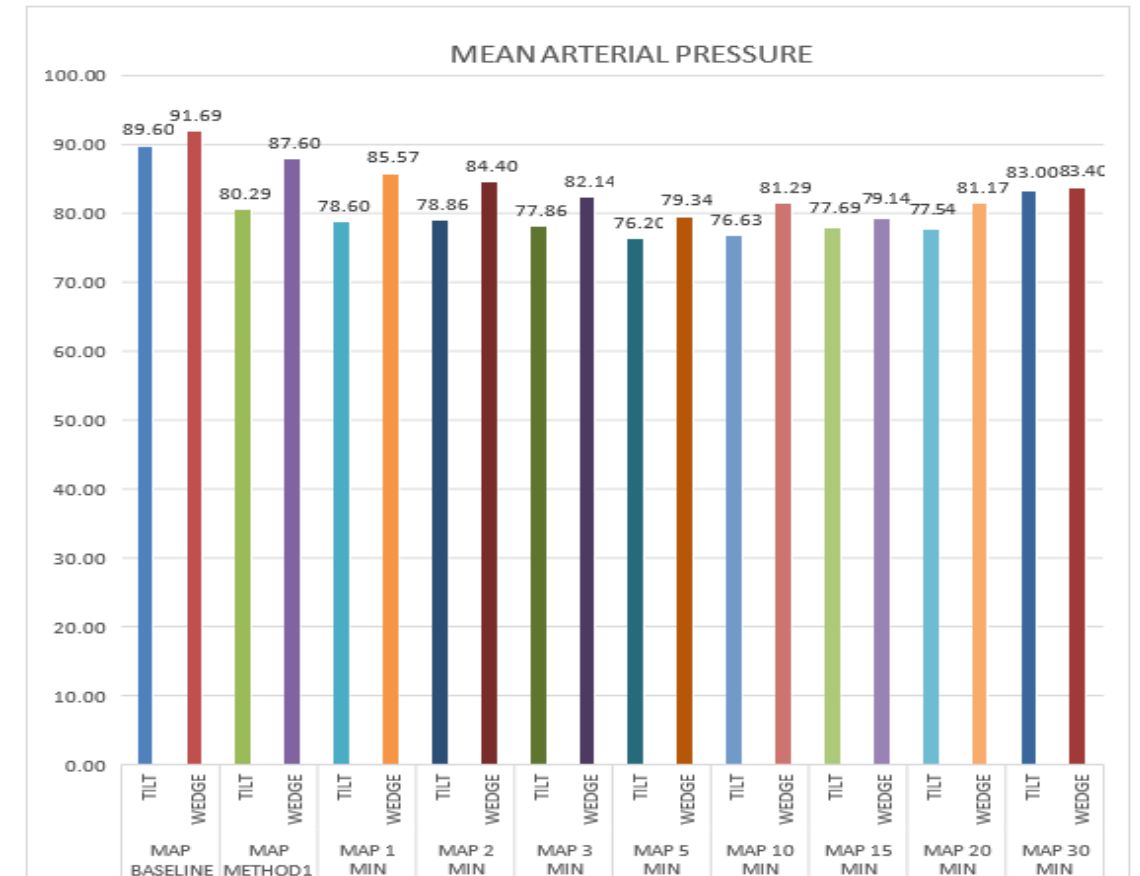
all of the statistical analysis.

**RESULTS**

**RESULT PART – I FREQUENCY AND DISTRIBUTIONS AND RESULTS**

The summated results are presented below

**MEAN ARTERIAL PRESSURE**



**Figure 1: Distribution of Mean arterial pressure**

PARAMETERS	WEDGE GROUP	TILT GROUP	P VALUE
<b>MAP</b>			
Baseline	91.69±10.87	89.6± 13.32	0.475
1 min	85.57 ±10.21615	78.60 ±17.70045	0.048
2 min	84.40 ±11.15453	78.86 ±11.06436	0.046
3 min	82.14 ± 11.31668	77.86 ± 9.13346	0.086
5 min	79.34 ± 11.81211	76.20 ± 8.76759	0.211
10 min	81.29 ±	76.63 ±	0.062

	10.89946	9.56736	
15 min	79.14 ± 10.53605	77.69 ± 10.40297	0.562
20 min	81.17 ± 10.19656	77.54 ± 11.58940	0.169
30 min	83.40 ± 12.16359	83.00 ± 14.35245	0.900

**Table 1: Distribution of Mean arterial pressure**

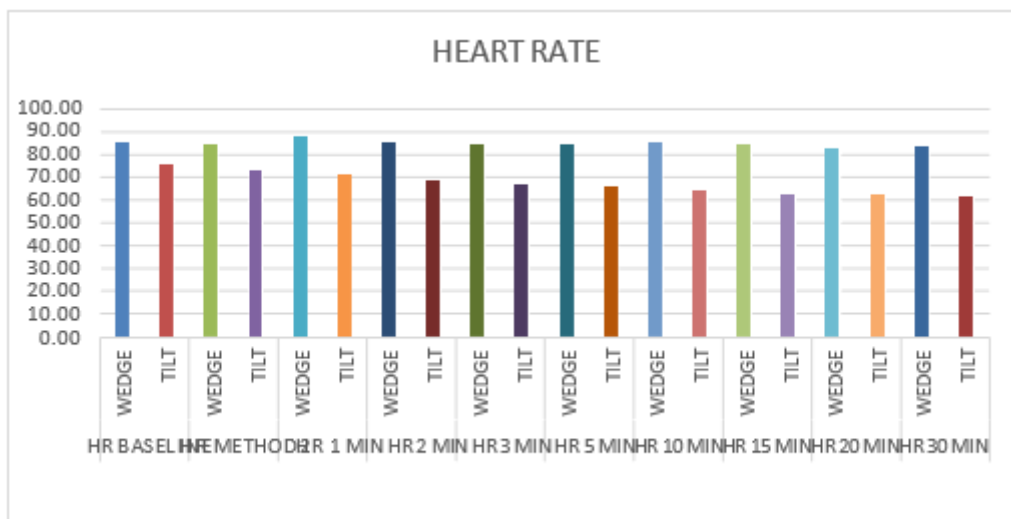
**RESULTS:**

In MAP P value for tilt & wedge group are not less than 0.05 in baseline & 1st minute. so which is not significant this shows that there was no significant difference between the wedge group & tilt group. But in 2 minute there was a difference in significant.

**DISTRIBUTION OF HEART RATE**

Baseline	84.89 ± 16.32892	75.00 ± 10.12859	0.00332124921593982
1 min	84.29 ± 16.32892	70.46 ± 10.31944	0.000157859264979516
2 min	87.83 ± 23.51781	70.46 ± 10.31944	0.000157859264979516
3 min	84.29 ± 14.22626	66.37 ± 10.2443	0.000157859264979516
5 min	83.77 ± 14.47072	65.20 ± 11.22183	0.000157859264979516
10 min	85.23 ± 18.84158	64.17 ± 12.35144	0.000157859264979516
15 min	83.71 ± 15.93659	62.43 ± 11.91461	0.000157859264979516
20 min	82.20 ± 18.43717	61.77 ± 11.86712	0.000157859264979516
30 min	82.66 ± 14.22496	61.23 ± 13.26004	0.000157859264979516

**Table 2: Distribution of Heart rate**



**Figure 2: Distribution of Heart rate**

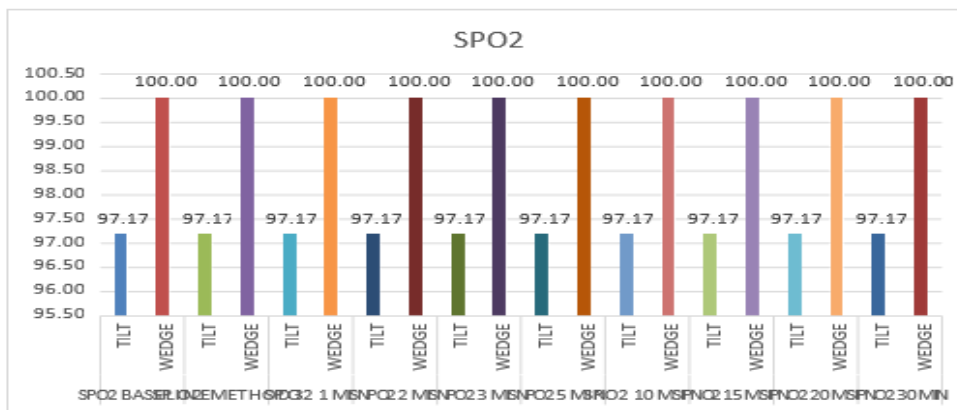
**RESULTS:**

The p value for HR wedge and tilt group from baseline to till 30 minutes are less than 0.05 which is significant. this shows that there was a significant in the wedge and tilt group in Heart rate

**DISTRIBUTION OF OXYGEN SATURATION**

baseline	100.00 ± 0.0000	97.17 ± 16.73405	0.3208557866093
1 min	100.00 ± 0.0000	97.17 ± 16.73405	0.3208557866093
2 min	100.00 ± 0.0000	97.17 ± 16.73405	0.3208557866093
3 min	100.00 ± 0.0000	97.17 ± 16.73405	0.3208557866093
5 min	100.00 ± 0.0000	97.17 ± 16.73405	0.3208557866093
10 min	100.00 ± 0.0000	97.17 ± 16.73405	0.3208557866093
15 min	100.00 ± 0.0000	97.17 ± 16.73405	0.3208557866093
20 min	100.00 ± 0.0000	97.17 ± 16.73405	0.3208557866093
30 min	100.00 ± 0.0000	97.17 ± 16.73405	0.3208557866093

**Table 3: Distribution of Oxygen saturation**

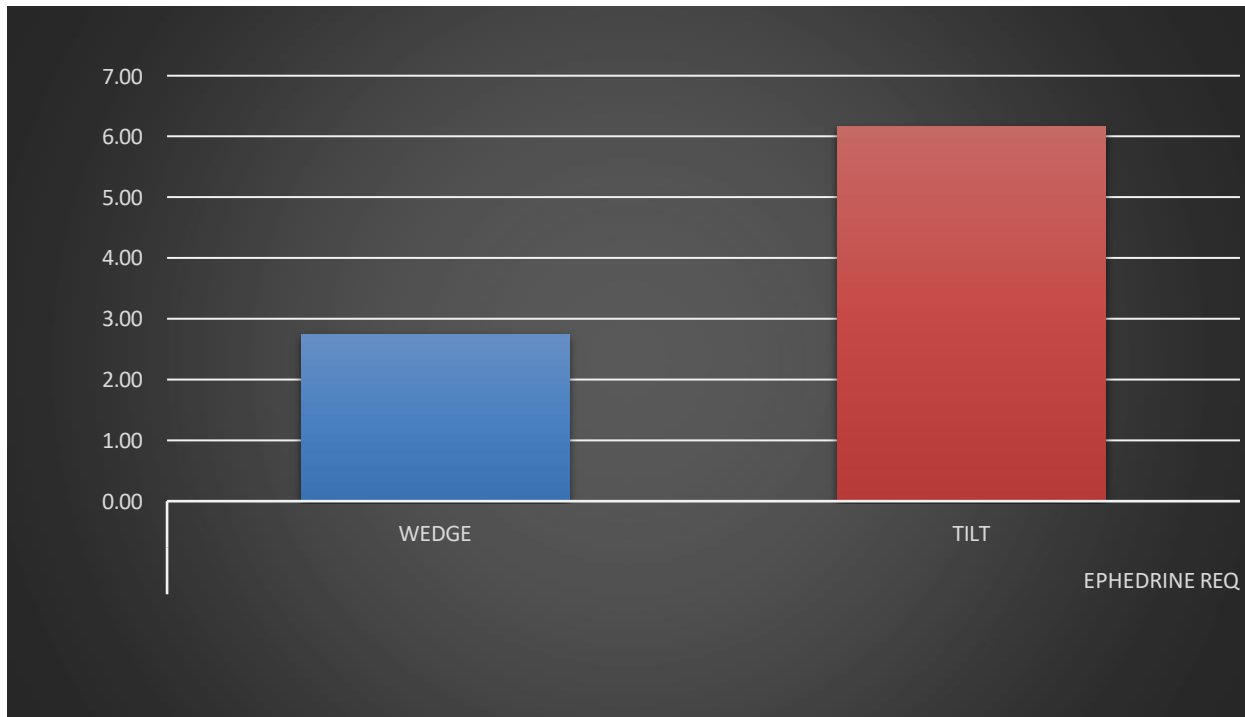


**Figure 3: Distribution of Oxygen saturation**

**RESULTS:**

The p value for SPO2 wedge and tilt group from baseline to till 30 mints are more than 0.05 which is not significant. this shows no significance between wedge group and tilt group

**EPHEDRINE REQUIREMENT**



**Figure 4: Distribution of ephedrine requirement**

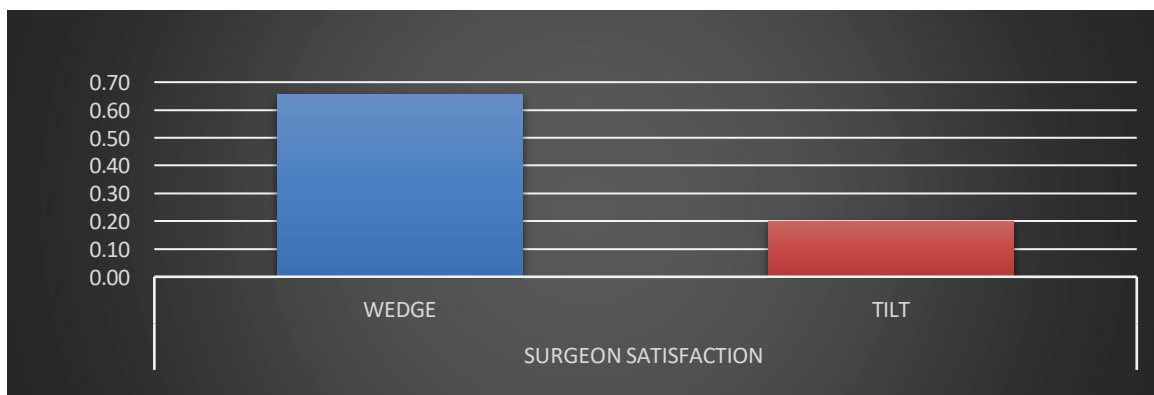
EPHEDRINE REQUIREMENT	2.74285714285714 ±4.20324004676824	6.17142857142857 ± 3.98146968346315	0.000816835081091 812
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**Table 4: Distribution of ephedrine requirement**

### RESULTS:

The p value for ephedrine requirement wedge and tilt group from baseline to till 30 mints are less than 0.05 which is significant. this shows that there was a significant in the wedge and tilt group in ephedrine requirement

### SURGEON'S SATISFACTION



**Figure 5: Distribution of Surgeon satisfaction Score**

SURGEON SATISFACTION	
wedge	tilt

yes	no	yes	no
23	12	7	28

Surgeon satisfaction score shows 69 percentage of surgeons chosen yes for wedge group whereas 20 percentage for tilt group, this shows that surgeon satisfaction score were higher in wedge group.

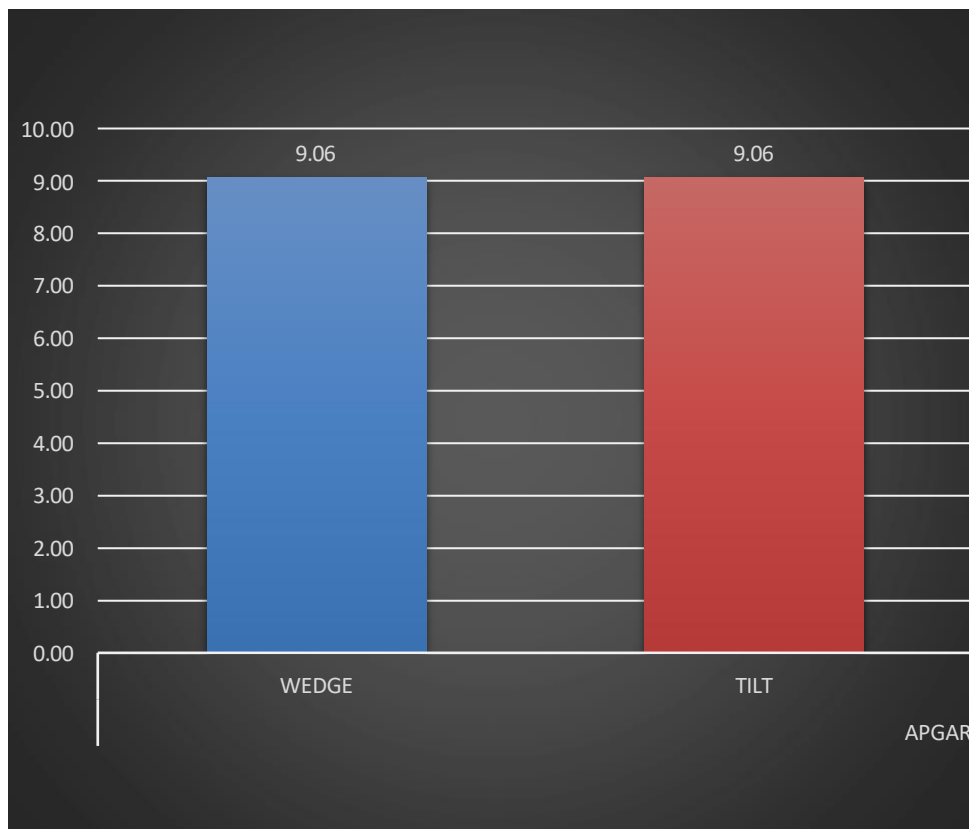
SURGEON	0.66 ±	0.20 ±	0.0000570088111614986
SATISFICATION	0.48159	0.40584	

**Table 5: Distribution of Surgeon satisfaction Score**

**RESULTS:**

The p value for surgeon satisfaction wedge and tilt group from baseline to till 30 mints are less than 0.05 which is significant. this shows that there was a significant in the wedge and tilt group in surgeon satisfaction

**APGAR SCORE**



**Figure 6: Distribution of APGAR Score**

APGAR SCORE	9.06 ± 0.48159	9.06 ± 0.33806	1..000
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**Table 6: Distribution of APGAR Score**

**RESULTS:**

The p value for APGAR score wedge and tilt group from baseline to till 30 mints are more than 0.05

which is not significant. this shows no significance between two groups

## DISCUSSION

Demographic profile analysis showed the average age of the patients enrolled in our study  $28.38 \pm 4.46$ . Out of 76 patients enrolled in the study, 70 patients completed the study. The remaining 6 patients were eliminated due to lack of consent.

Comparing baseline hemodynamic parameters like mean arterial pressure, heart rate, oxygen saturation (spo2) between the two study groups showed no significant difference

The mean arterial pressure (MAP) between the two groups showed the significant difference immediately after spinal anaesthesia till 2 mins.

The MAP group remained stable after 2 mins in both the study groups

Badrinath et al conducted an observational study on 120 patients, comparing table tilt and pelvic tilt and concluded that the MAP remained higher in both the groups after 5 mins. This is comparable to our study in which we found that the MAP remained stable after 2 mins of spinal anesthesia after an initial fall.

The Heart rate (HR) between the two groups showed the significant difference immediately after spinal anaesthesia till 30 mins.

The Decrease in HR is more significant in group tilt than group wedge from the beginning till 30 mins after the spinal anaesthesia. (P value 0.0001) both the study groups showed significant decrease in HR from the baseline.

The Oxygen saturation (SPO2) between the two groups showed no significant difference throughout 30 mins of the study.

Comparing the ephedrine requirement among the two study groups the tilt group required more ephedrine has high significance in drop the mean arterial pressure (0.0008)

On comparing the surgeon satisfaction score the wedge group had better satisfaction score than the tilt group (P value 0.000057)

There is no significant difference in the APGAR score between the two study groups (P value 1.000)

## CONCLUSION:

There was variation in Hemodynamic parameters either in table left tilt or Wedge only in the initial 5 minutes of the procedure. Tilt group required more ephedrine than wedge group, there was a comfort experienced by both patients & surgeons with wedge over the tilt of table.

## LIMITATIONS

- It is a Single blinded study with the LSCS under Spinal anaesthesia patient only.
- It is a single center trial with smaller sample size.

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