

# PERIPARTUM HYSTERECTOMY WITH OR WITHOUT BILATERAL INTERNAL ILIAC ARTERY LIGATION (BIAL):2 YEAR STUDY

## DR FARNAZ ZAHOOOR ASST.PROF LRH

### ABSTRACT:

OBJECTIVE: To see the primary and secondary outcomes of patients undergoing Emergency hysterectomy alone for massive primary postpartum haemorrhage compared to a patient undergoing Emergency hysterectomy with bilateral internal iliac artery ligation.

### METHODOLOGY:

This study started after ethical approval. It was a prospective Cross sectional study for 2 year from April 2020 to March 2022 , conducted in tertiary hospital ,Lady Reading Hospital ,Peshawar ,Pakistan where patients who had undergone peripartum hysterectomy (TAH)with or without internal iliac artery ligation for obstetrical massive heamorrhage like rupture uterus, placenta Previa, placenta accreta spectrum, covelier, atonic uterus and DIC were icluded . In Group 1 (TEPH))all peripartum hysterectomies were included while in group 2(TEPH +BIIAL) hysterectomy along with BIIAL were included. Informed consent of the patient to be enrolled in the study was taken once the patient was stable Data was taken regarding age ,parity ,gestation age, mode of delivery ,cause of pph ,surgical procedure performed,outcome of primary surgery,preoperative and postopHb to assess the amount of blood loss,intraoperative blood loss,blood products transfused,time period of surgery ,duration of surgery performed ,duration of stay in hospital,and ICU,number of blood products transfused ,status at time of discharge and complication.. The **primary outcome will be the failure of primary hysterectomy in terms of the cessation of blood loss alone and compare with a group of the patient in whom bilateral internal iliac artery ligation was also carried out at the time of Peripartum hysterectomy. ie relaparotomy required. Secondary outcomes are complications like damage to structure like ureters or sigmoid colon, internal iliac vein injury and haematoma formation during procedures and survival of patients**

### RESULTS:

A total of 144 patients who underwent a peripartum hysterectomy were enrolled in the study. When all patients were analysed the mean age was 30.78 ± 5.35. Demographic details are mentioned in table 1. **In TAH group 71.2% had a primary successful surgery while 10 (83.3%) had failed surgery and underwent repeat lapartomy for internal illiac ligation. (table 1)**The top two causes of PPH seen were Placenta Accreted Spectrum and ruptured uteres each 38 (26.4%). 135 (93.8%) patients survive PPH and discharged as alive.**Total 9 (6.3%) patients died after the procedure.**

When we compare the mean outcomes of both groups by t test, it is seen that **group 1(TAH alone ) had more ICU admission 15(57.7%) verses 11(42.3%),more maternal morbidity in ICU and more maternal deaths 5 (55.6%) versus 4(44.4%) massive heamorrhage 25(65.8%)versus 13(34.2%), acute renal failure , acute respiratory failure p=0.818.(table 2)**

However the amount of blood loss during surgery was less as compared to group 2 by 188.2ml ie 2004.3 ± 952.8ml verses 2192.5 ± 1087 ml and **time of surgery was prolonged in group 2 due to additional procedure of BIIAL by 14.5minutes ie 110.6 ± 32.2 min verses 96.1 ± 27.4 min p value 0.008.**

### DISCUSSION:

The incidence of PPH in this study was 3.58%. The worldwide incidence of PPH is highest in low-income countries ranging from 10.5% in sub-Saharan Africa to 25% in Uganda11, with a global prevalence of PPH to 6%12. In the updated French guidelines for PPH management published in 2014, uterine artery ligation and uterine compressive sutures are recommended as first-line conservative surgical therapies for severe PPH 14. These procedures are simple to perform and were found to be at least as effective as internal iliac artery ligation15,16. The B-Lynch technique seems to be the most commonly used and successful technique with success ranging from 89% to 100%17.But not all patient respond to b lynch and it is in these critical patients who are required life saving procedure of Peripartum cesarean hysterectomy.

The total number of emergency peripartum hysterectomies in this study reached 144, yielding an incidence rate of 3.5/10 000 (95% confidence interval) births. which is almost same to another study.<sup>19</sup>

The major cause of PPH in this study was uterine atony 59(41%)patients followed by uterine rupture 38(26.4%), this result is consistent with 75% cases of PPH due to uterine atony in the study by Lutomski13. In lower middle-income countries, uterine rupture (44.5%, 95% CI 36.6-52.7) was the most common indication; placental pathology (48.4%, 95% CI 43.5-53.4) was most frequent in high-income settings.18 In this study both uterine rupture and placenta accreta spectrum had same incidence ie 38(26.4%)..Morbidly adherent placenta has replaced uterine atony as the leading indication for emergent hysterectomy in some institution.19 but in our institution it has equalized the incidence of uterine rupture and it may even surpassed it due to leading trend seen over time.

ICU admission rate was 26(18.1%) in this study with severe morbidity of 20.8% while in study by Maraschini et al . Intensive care unit admission was reported in 49.9% of cases, 16.8% of women suffered severe morbidity and 5 women died.20

In group 1 TEPH versus 2 TEPH BIIAL , the surgical time (96.1 ± 27.4 min versus 110.6 ± 32.2min p<0.008), blood produts transfusion (4± 2.1 versus 5± 3.1 p<0.024), blood loss in ml (2004.3 952.8 versus 2192.5 1087.8 p<0.310) and duration in hospital in days (5.8 ±3.2 versus 6.2 ±3.8) were shorter.In a study by Bulbul et al the surgical time of TEH was134.2 ± 32.3 min which is almost equal to our study ,The length of hospitalization was . 6.1 ± 4.6 day in a study by Bulbul which is also equal to our study of 6.2± 3.8days , . the need for re-laprotomy was 15(57.7%)in group 1 TEPH in this study while in study byBulbul et al was 14%. <sup>21</sup>

The mean blood loss during the operation and the length of hospitalization after the operation, with or without internal iliac artery ligation (IIAL) were not significantly different in study by lwata <sup>24</sup>

IIAL facilitates hysterectomy and prevents reactionary haemorrhage. **Bleeding arrested by IIAL did not recur to require later laparotomy in any woman as seen in study <sup>22,23</sup>. In our study the failed primary surgery of TEPH was seen in group 1 where TEPH alone was done and landed up in relaprotomy with failure rate N=10 patients 83.3% versus N=2(16.7%) 95%CI p<0.115.These patients were reoperated and BIIAL done hence greater interval between initial heamorrhage and BIIAL . In group 2 , there were 2 patients who had failed primary surgery and re-laprotomy was done in which pelvic compression packing was done as there was no active bleeder seen and patients were in DIC. Those patients with failed primary outcomes suffered morbility and more ICU admission compared to group 2.**

In a study by lwata et al the efficacy of IIAL was 96.87 %. There were no intraoperative or ischemic complications .In our study the efficacy was 97.7% with just 1 case of internal iliac vein damage which was managed intraoperatively and patient survived. . The greater the time interval between onset of hemorrhage and IIAL, the graver the outcome seen. Early resort to IIAL is vital for improving the patient outcome.When group 1 failed cases were reviewed there was much higher morbidity with 75% versus 25% more blood loss anemia,massive heamorrhage 25(65.8%)versus 13(34.2%), acute renal failure 2versu 0, acute respiratory failure p=0.818.

| Table No. 2 Failed primary surgery /Relaprotomy group |                     |                            |                |             |         |
|-------------------------------------------------------|---------------------|----------------------------|----------------|-------------|---------|
| Variables                                             | Subgroup            | Types of surgery performed |                | Statistics  |         |
|                                                       |                     | TAH                        | TAH Plus BIIAL | Fisher (DF) | P-value |
|                                                       |                     | N (%)                      | N (%)          |             |         |
| Mode of delivery                                      | NVD                 | 8(100)                     | 0(0)           | 0.09(1)     | 0.091   |
|                                                       | C/Section           | 2(50)                      | 2(50)          |             |         |
| Postoperative complication                            | Blood loss anemia   | 3(75)                      | 1(25)          | 0.82(1)     | 0.818   |
|                                                       | Trauma to bladder   | 1(50)                      | 1(50)          |             |         |
|                                                       | Acute renal failure | 2(100)                     | 0(0)           |             |         |
|                                                       | Resp failure        | 1(100)                     | 0(0)           |             |         |
|                                                       | None                | 3(100)                     | 0(0)           |             |         |

| Table 1                       | Logistic    | Regression                 |               |                     |         |                        |       |       |             |              |        |         |
|-------------------------------|-------------|----------------------------|---------------|---------------------|---------|------------------------|-------|-------|-------------|--------------|--------|---------|
| Variables                     | Subgroup    | types of surgery performed |               | Statistics          |         | Unadjusted OR (95% CI) |       |       | Adjusted OR | (95% CI) AOR |        | P-value |
|                               |             | TAH                        | TAH PLUS BIIL | χ <sup>2</sup> (DF) | P-value | OR                     | Lower | Upper |             | Lower        | Upper  |         |
|                               |             | N (%)                      | N (%)         |                     |         |                        |       |       |             |              |        |         |
| Outcome of primary surgery    | Successful  | 94(71.2)                   | 38(28.8)      | 0.81(1)             | 0.369   | 1                      |       |       | 1           |              |        |         |
|                               | Faild       | 10(83.3)                   | 2(16.7)       |                     |         | 0.495                  | 0.104 | 2.364 | 0.173       | 0.020        | 1.534  | 0.115   |
| Mode of delivery              | NVD         | 43(70.5)                   | 18(29.5)      | 0.16(1)             | 0.691   | 1                      |       |       | 1           |              |        |         |
|                               | C/Section   | 61(73.5)                   | 22(26.5)      |                     |         | 0.862                  | 0.413 | 1.797 | 1.060       | 0.439        | 2.563  | 0.896   |
| status at time of discharge   | Survived    | 99(73.3)                   | 36(26.7)      | 1.33(1)             | 0.249   | 1                      |       |       | 1           |              |        |         |
|                               | Dead        | 5(55.6)                    | 4(44.4)       |                     |         | 2.200                  | 0.560 | 8.649 | 6.558       | 0.962        | 44.705 | 0.055   |
| ICU admission                 | Yes         | 15(57.7)                   | 11(42.3)      | 3.34(1)             | 0.068   | 1                      |       |       | 1           |              |        |         |
|                               | No          | 89(75.4)                   | 29(24.6)      |                     |         | 0.444                  | 0.184 | 1.075 | 0.257       | 0.077        | 0.855  | 0.027   |
| elective or emergency surgery | Elective    | 27(71.1)                   | 11(28.9)      | 0.04(1)             | 0.851   | 1                      |       |       | 1           |              |        |         |
|                               | Emergency   | 77(72.6)                   | 29(27.4)      |                     |         | 0.924                  | 0.407 | 2.101 | 0.631       | 0.237        | 1.684  | 0.358   |
| Blood loss group              | Normal      | 23(71.9)                   | 9(28.1)       | 1.23(2)             | 0.542   | 1                      |       |       | 1           |              |        |         |
|                               | PPH         | 56(75.7)                   | 18(24.3)      |                     |         | 0.821                  | 0.322 | 2.094 | 0.988       | 0.355        | 2.746  | 0.982   |
|                               | Massive PPH | 25(65.8)                   | 13(34.2)      |                     |         | 1.329                  | 0.479 | 3.690 | 1.834       | 0.541        | 6.222  | 0.330   |

### CONCLUSION:

Bilateral internal iliac artery ligation is performed during any intractable pelvic haemorrhage after failed hysterectomy and is a life-saving procedure.this study showed that **the greater the time interval between onset of hemorrhage and IIAL, the graver the outcome seen and most admission in ICU were in group 1 who had failed hysterectomy.**

Early resort to IIAL is vital for improving the patient outcome.No significant difference is present between intraoperative blood loss ,complication and length of stay in hospital in with or without BIIAL.

**LIMITATION OF STUDY:** We could not get significant results due to small sapmle size but if we could carry multicenter large scale study we can acheive a significant study.